Safety Maintenance and Production

EST. 1901 AMERICA'S PIONEER MAGAZINE IN ITS FIELD

FIFTY CENTS MARCH, 1955

Eye Protection

This

NEW FLEXIBLE MASK GOGGLE

Offers Excellent Impact Resistance!

LIGHT...COMFORTABLE INEXPENSIVE

Here's our new moderately-priced No. 482 Flexible Goggle of the single aperture mask type. It's light in weight — fits the face snugly and comfortably with a cushion-like effect. Extra wide and with ample clearance, it can be worn over most types of personal glasses or Safety R glasses. The interchangeable one-piece acetate lens is *optically correct**, and offers superior resistance to impact.

While made of a soft plastic material for flexibility, frame is solid and fits facial contours closely for full protection. There is an unusually wide field of vision for worker comfort, safety and efficiency.

Lens is easily removed and replaced and is available either clear or in green acetate. Elastic headbands are easily adjustable.

Goggle can be adapted for use as a chemical goggle by eliminating perforations in frame and fitting with vinylite lens and adjustable plastic headband. It is resistant to acids and alkalis. When ordering for chemical use please order as No. 484 or 485.

No. 482 Clear Frame, Clear or Green Lens

No. 483 Green Frame, Clear or Green Lens

No. 484 Chemical Goggle, Clear Frame, Clear or Green Lens

No. 485 Chemical Goggle, Green Frame, Clear or Green Lens

RECOMMENDED USES:

For protection against flying particles striking from any direction, on such operations as babbitting, chipping, cutting rivets, light grinding, on hand or machine tool work, or in occupations where spark or explosion hazards are present.

†T.M. Reg. by American Optical Company

American Optical

SAFETY PRODUCTS DIVISION

*The AO trademark, and the engineering and research in back of the trademark, are your assurance of optically correct eyewear with every AO goggle.

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For details, use Key # C-1 on card on page 75)

The Lady Agrees . . .

It Takes Foresight **TO SAVE EYESIGHT**

1. **To encourage the practice of eye safety.**
2. **To keep safety eyewear—glass or plastic—comfortably clean and clear.**
3. **To keep goggles free from steam and fog for a working day.**
4. **To make workers willing wearers of safety eyewear.**

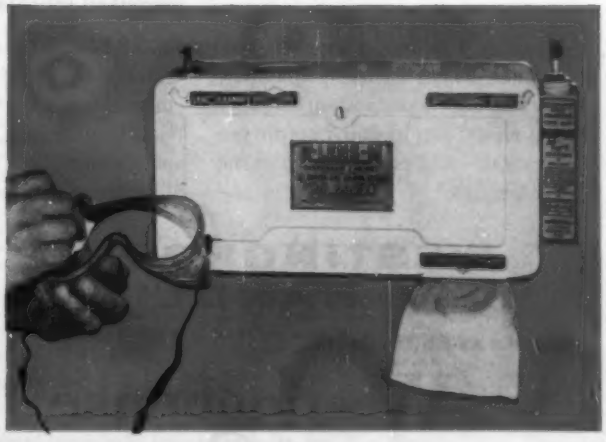
THOSE IN THE KNOW . . . PREFER

K-LENS-M
REG. U.S. PAT. OFF.

The Acknowledged Leader in the Lens Cleaning Field

K-LENS-M Liquids are
Economical
Fast Working
Long Lasting
Noninflammable

Send company letterhead for FREE sample.



THE **WILKINS** CO., INC.
Cortland 2, New York

For Best Results Always—Always Use K-LENS-M Products.

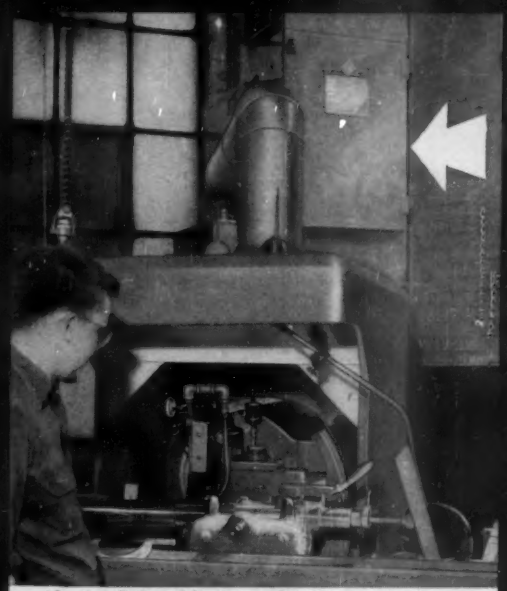
See our Exhibit in Booth 57, Greater New York Safety Council Show
(For details, use Key # C-2 on card on page 75)

Published by Alfred M. Best Company, Inc., Publication Office, Columbia Turnpike, Box 232, Rensselaer, N. Y. Editorial and General Offices, Best Building, 75 Fulton St., New York 38, N. Y. Entered as Second Class Matter at Post Office at Rensselaer, N. Y. Under Act of March 3, 1879. Subscription rates, $4.00 Per Year in the United States; $5.00 in Canada; Foreign, $5.00. Single Copies, 50 cents. Publication Date 1st.

Fact:

Westinghouse Precipitron Eliminates Coolant Oil Vapor as Hazard . . . Pays for Itself by Saving Oil . . . Increasing Efficiency

Before installation of Precipitron Oil Mist Control, this high-speed grinder developed as much as 10 gallons of oil vapor in a single shift. Result: menace to workers' health . . . fire hazard . . . efficiency depressant.



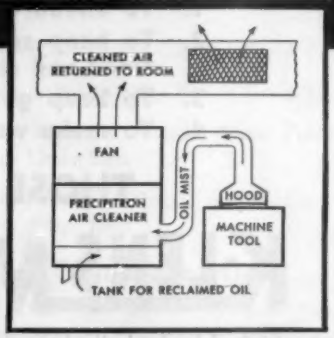
After installation of Precipitron Oil Mist Control, oil vapor from the same high-speed grinder is no longer a problem. Precipitron traps the extremely small particles of oil, dirt, and smoke—electronically—leaves air clean, safe.

Electronic air cleaners do what mechanical air filters cannot do

Westinghouse Precipitron Oil Mist Control is the *positive* way to free your plant of dangerous, costly oil vapors. Precipitron improves visibility, boosts operating efficiency, eliminates hazardous working conditions, strengthens employee morale—and pays for itself at the same time!

Present installations show savings of thousands of dollars yearly, directly in fuel, housekeeping expenses and salvaged cutting oil, indirectly in increased efficiency.

MORE FACTS? Call your nearest Westinghouse-Sturtevant Sales Engineer . . . he's the "Man with the Facts" on heating, air handling, and electronic air cleaning . . . or fill in the coupon below.



Here's how Precipitron works: Collection hoods catch oil vapor at source. Quiet, efficient Westinghouse fan units draw coolant-laden air through Precipitron air cleaners—oil, smoke, fumes are completely trapped. Operating costs: pennies per week.

WESTINGHOUSE AIR HANDLING

YOU CAN BE SURE... IF IT'S

Westinghouse

J-80431

Westinghouse Electric Corp.
Sturtevant Division, Dept. 18B
Hyde Park, Boston 36, Mass.

Please send more information on your Precipitron.

NAME AND TITLE .....

COMPANY .....

CITY ..... STATE .....

(For details, use Key # C-3 on card on page 75)

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Publication Office:
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SAFETY MAINTENANCE & PRODUCTION

FORMERLY "SAFETY ENGINEERING"
EST. 1901

VOL. 109, NO. 3 **MARCH, 1955**

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Life Nets Used in Bridge Construction
By courtesy of E. D. Bullard Co.

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

It's Safe to Say

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★ SERVANT, NOT MASTER

QUITE a few years ago—1562 it was—a gentleman named Bowen in his "Bulwark of Defense" pointed out that fire and water are good servants but bad masters. After a glance at the fire loss figures in this country for the year just past, it would seem that the phrase takes on added significance in these days of inflated values.

Obviously, the best time to fight fire is before it occurs and the most valuable form of fire control is fire prevention. Just as safety at its ultimate however, is still within the realm of Utopia, so fire too can break out when least expected.

It has been estimated that fire destroyed more than 870 million dollars of property in this country alone last year—an insignificantly slight decrease as compared with 1953 but substantially more than the fire losses of just two years ago.

Contributing factors to the huge fire losses include the increased exposure to fire resulting from rising employment, inferior building construction and of course larger replacement costs.

Improved construction cannot be considered a cure-all for every fire loss since many large industrial fires have been traced to higher combustibility of building contents, improper storage of flammable substances and the age-old problem of human indifference.

Good maintenance and fire prevention are interchangeable. Buildings of the most modern design and fire-resistive construction can present the most dangerous fire hazard if poor housekeeping is tolerated. Dirt and disorder imply inexcusable laxity in observing those rules designed to provide safety and efficiency.

Discounting the deliberate action of an arsonist, practically every fire results from bad management. Conversely, fires are virtually all preventable by the observance of safe practices through the combined medium of safe building design and construction; proper maintenance and adequate provision for controlling incipient fires.

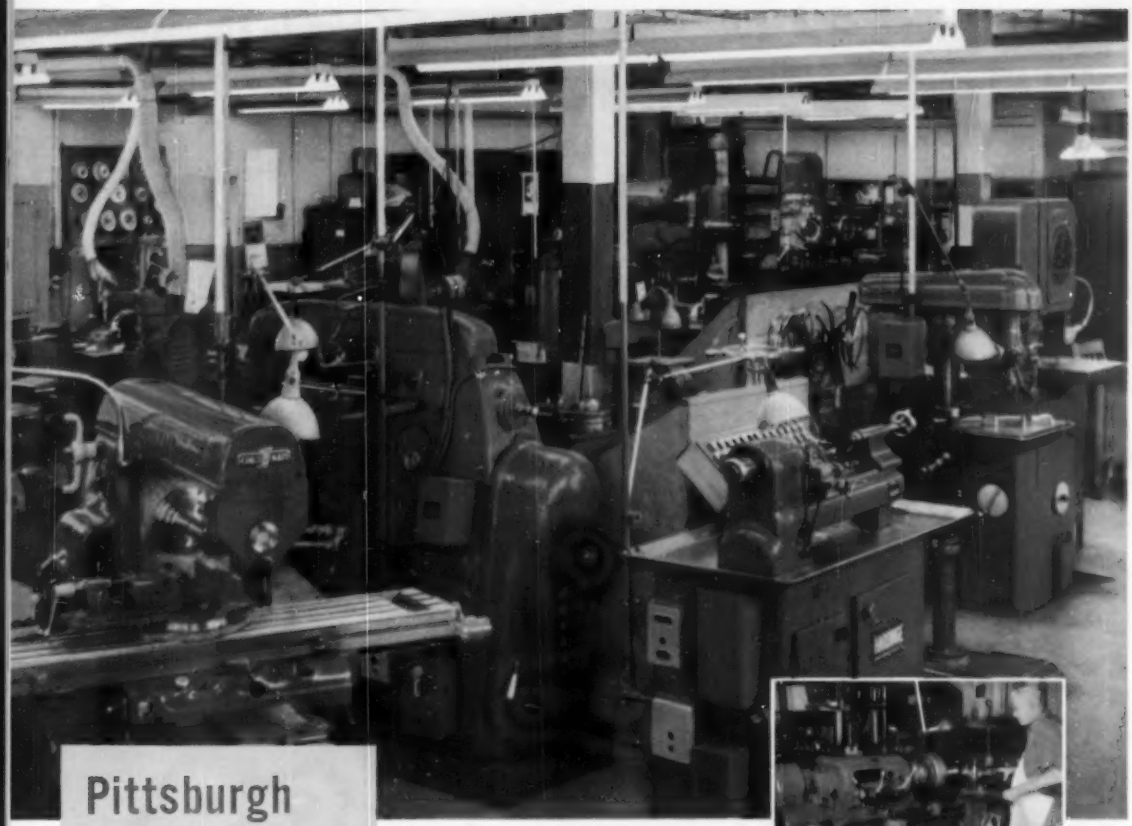
So long as fires do occur, the danger of inadequate, make-shift fire protection must be recognized. It has been said that a conflagration is merely a little fire that got away. That being true, many fires can be controlled in their incipient stage when scientifically designed and approved methods of extinguishment are employed.

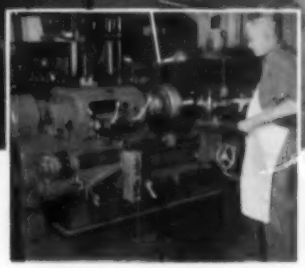
With the march of progress in industry, there usually follows the introduction of new hazards which must be controlled if we are to cope with the senseless waste of nearly a billion dollars in a single year.

Great as the fire loss can be when viewed as a direct loss of property, the indirect loss caused by fire increases the known figure to an incalculable degree.

Unemployment, decreased production and hidden costs make fire one of the heaviest financial burdens imposed upon our nation's economy. And so, Sonny-boy, tossing it back into the laps of the fire insurance companies to whom premiums are paid is the most unrealistic viewpoint in the world. H.A.

For a copy of booklet described on opposite page, use Key # C-4 on Inquiry Card on page 75 →





Pittsburgh COLOR DYNAMICS®

Helps Achieve Ultra-Accurate Workmanship in Graflex Plants

By reducing eye fatigue, properly engineered colors aid operators to make world-famous camera equipment with less re-work and scrap!

Let Us Make an Engineered Color Study of Your Plant—FREE!

Why not investigate what COLOR DYNAMICS will do in your plant? Send for our free book which explains this painting system and how to use it. Better still, call your nearest Pittsburgh Plate Glass Company branch and ask to have a representative give you a comprehensive engineered color study of your plant—without cost or obligation. Or mail coupon at right!

PITTSBURGH'S PAINTING SYSTEM of COLOR DYNAMICS, purposefully used on walls and machines in the plants of Graflex, Inc., of Rochester, N. Y., improves the efficiency, safety and morale of the operators who make the world's best-known high-speed cameras.

Photographic equipment made by this pioneer maker is known to press and cameramen for its versatility and reliability. Industry and military use its identification and microfilming cameras. Telephone companies use its meter-recording cameras. To the Armed Services, Graflex is a leading source of combat and aerial cameras, artillery telescopes and fire-control devices.

The many ways in which operators in the Graflex plants benefit by the use of COLOR DYNAMICS are best summarized in this comment of M. B. Moore, vice president and factory manager:

"**Because** of the precision our production requires, it is important that our operators have the best possible seeing conditions. By painting walls and ceilings in eye-rest colors and by using colors on machinery that differentiate working from stationary parts, according to COLOR DYNAMICS, we have relieved eye strain and reduced physical fatigue. An appreciable part of the reduction in re-work and scrap can be attributed to this improvement of our operators' environment.

"**Safety, too,** has been improved. Our recent record of 411 working days without a lost-time accident gained for us an Award of Merit from the National Safety Council. This improvement in productive efficiency and safety has enhanced morale, creating friendlier relationship and greater cooperation among the members of our organization."

Send For FREE Book!

Pittsburgh Plate Glass Co., Paint Div., Department SM-35, Pittsburgh 22, Pa.

☐ Please send me a free copy of your booklet "Color Dynamics."

☐ Please have your representative call for a Color Dynamics Survey without obligation on our part.

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Street_____

City_____

County_____ State_____

PITTSBURGH PAINTS

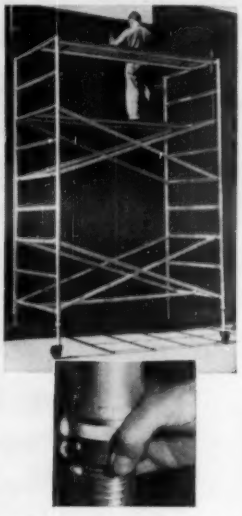
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

ALUMINUM SCAFFOLDS . . . by The Patent Scaffolding Co.

NEW 4'6"-WIDE LADDER SCAFFOLD



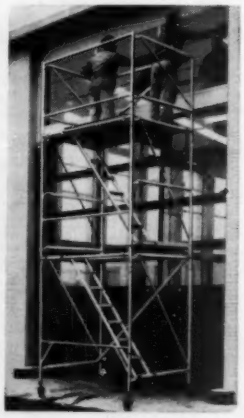
This 4'6"-wide aluminum ladder scaffold provides added stability and extra working room for painting, cleaning, relamping and general maintenance jobs. Lightweight, aluminum components are easy to erect. Base section is 6' high. Other heights are achieved by combining other ladder units of 4' and 5'4", and using 24" leg adjustment (Inset). Leg adjustment (on all three Scaffolds) is built in and gives safe, positive height adjustment without lifting scaffold. Diagonal braces give 6', 8' or 10' spans. Smooth-rolling rubber-tired casters. Use inquiry card or write The Patent Scaffolding Co., Inc., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P.

2'-WIDE LADDER SCAFFOLD

Has same features as 4'6"-wide scaffold, but is 2' wide. Ideal for maintenance work in narrow hallways and aisles. Rolls right through standard 30" doorway. Can be used with diagonal braces to give spans of 6', 8' or 10' platform. Compact—parts lie flat and take up little room. Use inquiry card or write The Patent Scaffolding Co., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P.

SCAFFOLD OPENS LIKE A BOOK

One man can erect the base section of the "Fold-A-Way"* scaffold in less than a minute. End frames swing open sideways, while the base section is in a standing position, making an easily managed swing of about 90°. Adding additional 6' sections takes just a few minutes. Basic unit is 4'6" x 6' and is 7' high including rubber-tired casters. Ball bearing extension legs permit height adjustment up to 24". Approved by Underwriters Laboratories, Inc. For more information on the "Fold-A-Way" Scaffold use inquiry card or write The Patent Scaffolding Co., Inc., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P.



(*Trade Mark)

(For details, use Key # C-5 on card on page 75)

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Flash-Point Tester 70
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Armortred NEOPRENE Cord Soles and Heels

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By Invitation Member

Emblem of
BUSINESS CHARACTER
Rice Leaders of the World Association
Represents High Standing in
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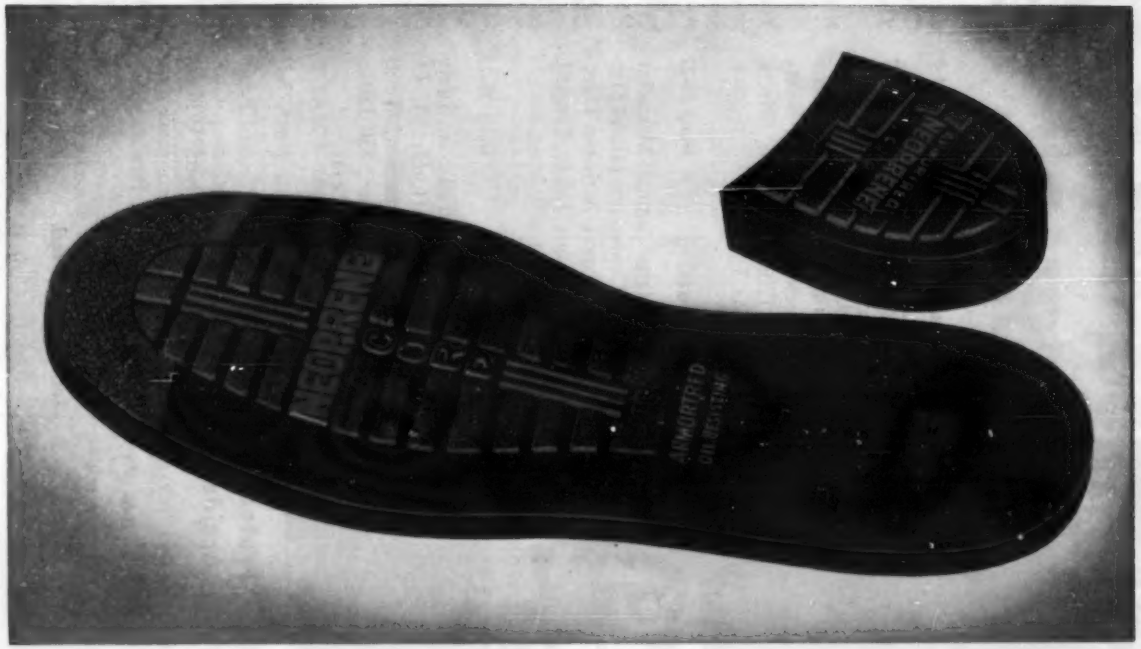
DUPONT NEOPRENE TIRE CORD
Combined for Protection against
OILS—HEAT—ACIDS
LONG RUGGED WEAR
and a SAFE SURESTEP
SMART for STYLE
14 IRON BLACK or BROWN
with or without Red Label



ANOTHER FINE PRODUCT BY QUABAUG—CRAFTSMEN IN SAFETY, WORK and DRESS SHOE SOLES
There is no short cut to quality

MANUFACTURED AND DISTRIBUTED BY **QUABAUG RUBBER COMPANY** NORTH BROOKFIELD, MASSACHUSETTS

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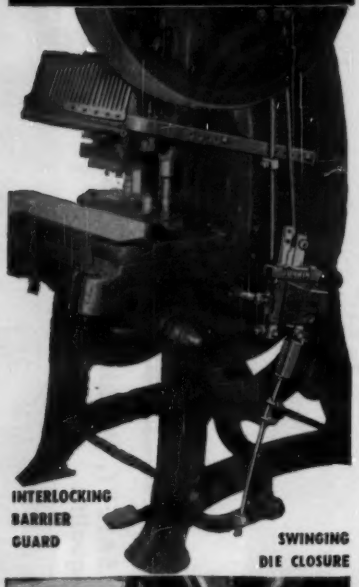
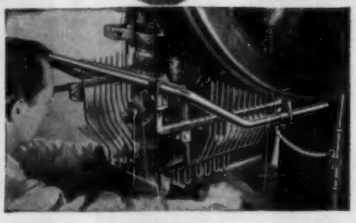
JUNKIN
SAFETY GUARDS





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JUNKIN safety guards prevent press accidents, afford maximum protection, increase press production, lower insurance costs and generally improve plant morale. Make an investment in safety now and investigate Junkin Safety Guards for primary and secondary punch press operations. Write for free catalog "The Key to Protection".

JUNKIN
SAFETY APPLIANCE CO.
101 S. FLOYD ST.
LOUISVILLE 2, KENTUCKY

(Use Key # C-7 on Inquiry Card on page 75)

THE Future SHOWS

Philadelphia, Pa. *March 8–9*

Twenty-first Annual Philadelphia Regional Safety and Fire Conference and Exhibit (Broadwood Hotel). Walter W. Matthews, Managing Director, Philadelphia Safety Council, 17th & Sansom Streets, Philadelphia 3, Pa.

Boston, Mass. *March 21–22*

Thirty-fourth Annual Massachusetts Safety Conference (Hotel Statler). Bert Harmon, Activities Director, Massachusetts Safety Council, 31 State St., Boston 9, Mass.

Houston, Texas *March 21–22*

Sixteenth Annual Texas Safety Conference (Rice Hotel). J. O. Musick, General Manager, Texas Safety Association, Inc., 830 Littlefield Bldg., Austin, Texas.

Pittsburgh, Pa. *March 29–31*

Thirtieth Annual Western Pennsylvania Safety Engineering Conference & Exhibit (Hotel William Penn). H. H. Brainerd, exec. manager, 605 Park Bldg., Pittsburgh 22, Pa.

Indianapolis, Ind. *March 30–31*

Eighth Central Indiana Safety Conference & Exhibit (Claypool Hotel). Indianapolis Safety Council, 320 N. Meridian St., Indianapolis, Ind.

Kansas City, Mo. *March 31–April 1*

Central States Safety Congress (Municipal Auditorium). George M. Burns, Director, Kansas City Safety Council, 419 Dwight Bldg., Kansas City 6, Mo.

New York, N. Y. *April 11–15*

Twenty-fifth Annual Greater New York Safety & Exposition (Hotel Statler). Harold C. Mesch, general chairman, Greater New York Safety Council, Inc., 60 E. 42nd St., New York 17, N. Y.

Niagara Falls, N. Y. *April 19–21*

Fifteenth Annual Western New York Safety Conference, in cooperation with the American Society of Safety Engineers (Niagara Hotel). Patsy E. Gismondi, Executive Secretary, 1436 Delaware Ave., Buffalo 9, N. Y.

Cleveland, Ohio *April 26–28*

Twenty-fifth Annual All Ohio Safety Congress & Exhibit (Hotels Cleveland and Hollenden). A. W. Moon, Congress Manager, Industrial Commission of Ohio, Safety & Hygiene Div., Columbus 15, Ohio.

Grand Rapids, Mich. *April 26–28*

Twenty-fifth Annual Michigan Safety Conference (Pantlind Hotel and Civic Auditorium). R. H. Goring, Executive Secretary, Michigan Bell Telephone Co., Detroit, Mich.

Chicago, Ill. *May 1–3*

Greater Chicago Safety Conference & Exposition (Sherman Hotel). Greater Chicago Safety Council, 10 N. Clark St., Chicago 2, Ill.

Syracuse, N. Y. *May 16–18*

Central New York Safety Conference & Exposition (Hotel Syracuse & Hotel Onondaga). Walter L. Fox, Manager, Safety Division, Syracuse Chamber of Commerce, 351 S. Warren St., Syracuse 2, N. Y.

Chicago, Ill. *May 16–20*

Eighth National Materials Handling Exposition & Conference (International Amphitheatre). Clapp & Poliak, Inc., exposition management, 341 Madison Ave., New York 17, N. Y.

Which is the best Vac for YOUR job?

• Multi-Clean industrial vacuum cleaners are portable, high performance units that will meet your every cleaning need. They are sold under the famous Multi-Clean guarantee which is your assurance of complete satisfaction.

THE MULTI-CLEAN MCV-214

The finest 10 gallon capacity, heavy-duty vacuum cleaner on the market. Powerful . . . quiet . . . versatile . . . rugged . . . safe. For wet or dry pickup. Includes attachments for both floor and upholstery cleaning. U/L and CSA approved.

THE MULTI-CLEAN D-100

This 29 lb. easy-to-carry, wet or dry pickup vacuum cleaner is just the thing for smaller jobs, where easy portability is important. Holds 3½ gallon wet or ½ bushel dry material. Despite low cost, an outstanding performer. U/L and CSA approved.

THE MULTI-CLEAN E-200

Medium-priced, all-purpose vacuum cleaner is recommended for medium-size wet or dry pickup jobs in your place of business. Tank holds 10 gallons wet or 1¼ bushels dry. The E-200 will give years of trouble-free service. U/L and CSA approved.

THE MULTI-CLEAN F-300 VAC-BLOWER

Combination vacuum cleaner and blower. 16-lb. head and dust bag are detachable for vacuuming and blowing in cramped quarters. Excellent for blowing dust from otherwise inaccessible locations. Tank capacity: 10 gallons, U/L and CSA approved.

MULTI-CLEAN PRODUCTS, INC. Dept. SMP-35
2277 Ford Parkway, St. Paul 1, Minnesota

Gentlemen: I'd like floor maintenance information on: ☐Concrete, ☐Asphalt Tile, ☐Terrazzo, ☐Wood, or_____. Also literature on: ☐Floor Machine, ☐Scrubbing Machine, ☐Industrial Vacuum Cleaner.

Name_____ Title_____

Address_____

City_____ Zone____ State_____

(For details, use Key # C-8 on card on page 75)

New! Stac-Vent

Stops Liquid Splash
Greater Safety
More Comfort

SOFT VINYL FRAME
SAFETY GOGGLE

Model 440SV
Methacrylate Lens
Model 441SV
Acetate Lens

WATCHEMOKET
STAC-VENT
eye SAVERS

. . . a new principle in goggle ventilation

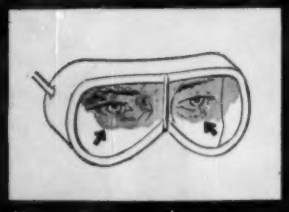
Greater safety . . . No liquid, chemical or other hazard can reach the eye. Ventilation holes are protected under the "Stac-Vent" hood located properly to eliminate lens fogging. Methacrylate or Acetate Lenses and Vinyl frame protect against all hazards: impact, chemical splash, sparks, molten metal.

Safe Ventilation . . . "Stac-Vent" provides draft ventilation at the top and center of the goggle (where warm, moist air normally accumulates). Large openings for ventilation are possible because they are safely shielded by the "hood".

More comfort . . . Soft Vinyl Frame form-fits the face. Goggles are lightweight . . . hug the face without pressure, thanks to soft edge fins which yield to the contours of the nose and face.

Choice of Frames and Lenses . . . Soft Vinyl Frames are available in clear, transparent green or opaque black with STAC-VENT, Regular (Holes) or Screen Ventilation; also no ventilation.
Furnished with clear, light, medium or dark green Methacrylate Lens for heavy impact.
Furnished with clear or medium green Acetate Lens for light impact.

Here's How It Works



Moist air accumulates at top inside of goggle causing inside of lens to fog.

STAC-VENT drafts off hot, moist air from inside goggle just as a chimney carries off smoke.

PLUS ALL THESE FEATURES

Fits over all prescription glasses . . . Extra wide 6" lens and large frame fits over all prescription glasses — metal or horn-rimmed. Soft Vinyl Frame is translucent (except opaque black) for partial side vision. Front of frame protrudes to act as bumper, protecting the lens surface when thrown on table or floor.

Optically correct, shatterproof lenses . . . Eye Savers Methacrylate and Acetate Lenses are guaranteed optically correct. Cannot cause image distortion with resultant permanent injury to the eyes. They are shatterproof — cannot splinter with impact.

Lenses are easily replaceable . . . no special tools or skill is required to replace lenses. Positive Lens Lock Bar is easily removed . . . new lens inserted (soft vinyl frame spreads at finger touch) . . . new Lens Lock Bar (supplied with each replacement lens) is put in place.

See Your Authorized Eye Savers Supplier, or write direct for full Information on the new "Stac-Vent" and other modern Eye Savers

Quality Eye Protective Equipment ***Made by the Leaders in Plastics***

WATCHEMOKET OPTICAL CO., INC.

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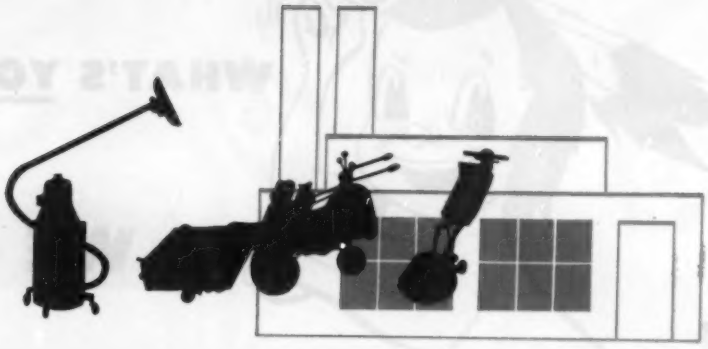
(For details, use Key # C-9 on card on page 75)



6th plant maintenance & engineering show

TWENTY-FIVE THOUSAND plus visitors filed through the newly-built addition to Chicago's International Amphitheater late this January to inspect the more than 9 thousand products, valued at 4 million dollars, shown at the 6th Plant Maintenance and Engineering Show. For four days, from noon till six and sometimes till ten at night, the record crowd from all over the country and 15 foreign countries attended sessions and exhibits devoted to reducing the vast, multi-billion dollar annual cost of factory upkeep, and to paving the way for the automatic, push-button factory of the future when maintenance of the machines will be the biggest production problem. *(Cont'd on p. 16)*

WHAT'S YOUR BIG IDEA?

WE ASKED OUR . . . AND THEIR ANSWERS HELPED US!

By DONALD W. FOUSE
Division Industrial Engineer
Thompson Products, Inc.
Cleveland, Ohio

LIKE MANY OTHER suggestion plans ours was a war baby, born of the necessities of an all-out production effort. Like many other industries, our company had a sudden drop in operations at the end of World War II. At that point, our management decided to replace the war-born suggestion plan with a very informal arrangement which would award suggestors, but not make an issue of a suggestion system as such. This type of operation continued throughout our many plants scattered over the country until early in 1953. At that time I was assigned to prepare a suggestion plan for the company's 22,000 employees, for the approval of top management.

How did all this come about? It was the result of 3 forces. Our top officers recognized the need for a formal plan; our independent union pushed from their side; and we never ended our pressure from the operating staff. All 3 forces met at once and the suggestion plan was conceived.

We tried it out first in our Cleveland area operations. The management of these operations made changes they felt were necessary in our first draft and submitted it to the company heads. After their approval we began the build-up phase. Included in this phase were printing the master policy, writing and printing the employees booklet, suggestion form, orientation material for supervisors, orienting our union officials with the plant, arranging material for release in our company house organ, buying and planning installation of suggestion boxes, setting up an administrative plan for paper work, and scheduling the mailing of booklets and blanks to employees' homes. The last named was the final step and we were off and running. We have been doing a land office business ever since.

The pattern that developed from the way people participated in our plan was typical of most new plans. The initial phase found us swamped with ideas for improvement. At the end of about 3 months we reached our peak. Then the participation leveled off roughly to an average of 300 suggestions per month.

The organization of the plan was decentralized as much as possible in order to get as complete understanding as possible of the idea and to give benefiting divisions as great an opportunity as we can to exploit potential gains. Divisional committees are therefore the central skeleton of our organizational structure. To handle our volume of suggestions we use the investigator type of operation. Each suggestion is picked up by the suggestion secretary, screened for originality, acknowledged, and forwarded to the division affected for investigation and control by

In submitting your suggestion, please see that all information requested on the other side of this sheet is given. State your idea as clearly as possible and your reason for thinking it should be adopted. Be sure you SIGN YOUR NAME!

Ask yourself these questions about your idea; they can probably improve the QUALITY of your suggestion.

1. WHY should the change be made?
2. WHAT is necessary to make the change?
3. WHERE will it apply?
4. WHEN should the change be made?
5. WHO will be affected by the change?
6. HOW is the best way to do it? Submit sketches, diagrams, and other illustrative material, if necessary.

EMPLOYEES . . .

methods engineers. If the suggestion goes beyond this stage the method engineers check with the originator and investigate the particular layout. The suggestion is then returned to the secretary for committee action. Then a final letter with a check or the reason for declining the suggestion is mailed.

All this entails a great deal of work and expense for the company. What have we gained for this effort? One very tangible item received was the equivalent of 2 standard boxes of aspirin tablets in the suggestion secretary's office. Each day for the first 4 weeks in one particular box we received an aspirin tablet. Apparently some kind-hearted soul realized we were having our problems keeping up with the onslaught of ideas and decided we needed a mild sedative. He asked for no award; just performed a kind humanitarian act. Conversely, we received about 10 "Drop Dead" suggestions. Considering that we received well over 25 hundred suggestions in the first 10 months, we don't think the ratio is so bad.

Here is what we have really gained:

1. We have set up a means for our employees to communicate with management for improving operations.

2. We have made possible the recognition of employees as individuals.

3. Our employees feel they are an active part of the company.

(Continued on page 20)

WE SAID TO THEM . . .

HERE'S WHAT WILL HAPPEN TO YOUR SUGGESTION

From the deposit box, your idea goes to the Suggestion Secretary who dates it to fix the time when it was received, and it is then checked for originality. You will be notified promptly of the receipt of your suggestion.

1

2

Next, your suggestion is titled, indexed, and sent to your Division Industrial Engineer. He checks it and assigns a Methods Engineer to investigate your idea.

The Methods Engineer contacts you to discuss your suggestion; possibly you can explain it to him a little better when you both talk it over.

3

4

The reports of the Methods Engineer and the Division Industrial Engineer are next sent to the Secretary who presents your "idea file" to the Suggestion Committee for their decision.

Now comes the waiting period! Some suggestions require only minor changes in present procedure . . . these can be put into practice quickly . . . and you get paid quickly. Other suggestions require management decisions and purchase of new tools or machines . . . it may take weeks, months, even a year or so to put these into practice. And, *your pay-off* naturally is slower coming. But don't get discouraged! Things are moving! You are notified that the Committee has accepted your idea and one day . . .

5

YOU WIN FAME, CASH, AND the satisfaction of doing something over and above your specified job duties.

***But*...you can't expect to win *every* time! If your suggestion is turned down, just resolve to turn another one in . . . and another one . . . and another. The more good ideas you turn in . . . the sooner you'll hit the jackpot.**

Who says saf

IN ANY INDUSTRY in which no thought has been given to safety, the accident rate is usually high. When a safety engineer begins to apply normal, common sense safety rules we see a decrease in the accident rate. The safety engineer, through job and accident analysis and other constructive effort, reduces the accident rate until he reaches what we term, "an irreducible minimum," a plateau below which further safety work seems to have no effect.

It is at this level that the industrial medical man comes into being. The accidents that occur below this plateau of irreducible minimum are caused by elements in the individual worker over which the best safety man in the world has little or no control. Poor personal adjustment to the environment, lack of attention, poor health, chronic pain and discomfort are some of the worker factors that cannot be eliminated by safety devices. It is in this area that the industrial medical man, working closely with the safety director, can have the greatest immediate impact on safety records.

In our organization, Occupational Health Services, we are concerned chiefly with the problems of industrial medicine. In the course of this work we have developed what we feel is a new concept of medicine as applied to industry. We like to refer to this concept as "constructive medicine," as opposed to "preventive medicine."

The preventive medical man takes a normal, healthy patient and tries to prevent his becoming ill. The constructive medical man takes the same patient and tries to increase both his physical and mental capacity. Success in industrial medical work is exactly proportional to the degree or extent to which we maintain the mental and physical health of the average employee.

Foot Pain Prevalent

In our daily routine contacts with industrial workers we became aware of the prevalence of foot pain and disability among our employees. Further investigation and analysis of existing clinical records convinced us of the devastating effects this constant suffering inevitably has on the worker as an individual. To answer this drain on the worker's capacity we formulated a program of foot health that included a weekly clinic devoted entirely to foot care.

Perhaps the first fact that we verified was that foot disability, to a greater or lesser extent, is the common disease of civilization. ***We estimate conservatively that more than 50 percent of industrial workers have some type of foot disability.***

The chief aim of our foot health program is to increase general standards of foot health among all employees. In accomplishing this aim, certain other gains automatically occur:

1. ***Decreased accident rate***—The portion of accidents caused by lack of worker attention should definitely be reduced. A sore, aching foot is a distraction, and can be responsible for many accidents labelled as decreased worker attention.

2. ***Decreased absenteeism***—It is true that an entire day's work may be lost due to foot disability. This

By DR. GEORGE F. HOLT
Staff Chiropodist
Occupational Health Services
Asheville, North Carolina

FOOT PROTECTION SERIES

ety shoes are protective?

program, however, is concerned primarily with fractional and indirect absenteeism. The worker who makes extra trips to the "coke" machine or the locker room is many times answering the demands of a tender corn rather than the demands of nature.

3. ***Decreased labor turnover***—The foot sufferer whose work requires standing hour after hour will sooner or later begin to associate his pain with his job. The next logical step is to change his job to fit his aching foot. Unless these employees are salvaged by proper foot care, there can be an expensive labor turnover.

4. ***Improved labor relations***—The foot sufferer who is given relief is a grateful patient. He is impressed with management's concern for what he considers his personal problem. This concern can be a factor in the improvement of labor relations.

5. ***Increased production and efficiency***—Industrial workers are more effective workers when their feet are comfortable.

In addition, a foot health program can have other aims and functions. The manifestation of systemic diseases can, and frequently does, first localize in the feet. A chiropodist can assist in the early identification of these diseases. Control and treatment through the particular medical channels can thus be instituted earlier.

A foot health program can also help wise personnel placement. Foot conditions which limit the work of an individual can be called to the attention of the personnel section, so that each employee can be intelligently placed and used at his maximum capacity.

Each employee passing through a foot health clinic is encouraged to visit the safety shoe department. A program of foot health can thus be a helpful impetus to a safety shoe program.

Where Do Safety Shoes Come In?

Specifically, what makes a safety shoe, and what should you look for in a safety shoe or in any shoe? The shank of the shoe is a piece of metal or other rigid material that runs from the ball area of the sole back into the heel. This supportive device should be absolutely rigid and have no give to it. The ball area is the widest part of the shoe; and the great toe joint should rest here when you are bearing weight. In discussing the length of any shoe you are talking in terms of heel to ball length, not heel to toe length. The waist of the shoe is the part of the upper which contains lace eyelets. The toe box is that area of your shoe which houses your toes.

In fitting shoes, the initial size may be measured by any of the foot measuring devices available; but the final fitting must be done with the fingers while the wearer is standing. We feel so strongly about this aspect of shoe fitting, that we do it while the wearer is holding an 80-pound load in two sand buckets. The widest portion of the foot (the ball) must fall into the widest part of the shoe. While the wearer bears weight the fitter must be able to pinch up a little excess leather on

(Continued on page 39)

"Safety Maintenance" *Salutes* A SAFETY IDEA

Handy Hook Cuts Battery Change Time

AN INGENIOUS storage battery lifting device to quicken battery changes in baggage trucks is now being used at New York City's Grand Central Terminal. In Grand Central more than 100 battery-powered trucks must be kept on the job 24 hours a day, 7 days a week to handle mail, baggage and newspapers. Not more than 3 minutes per truck is allowed for changing batteries.

The rig adopted is particularly handy where batteries must be removed horizontally and when both end and top clearance in the compartment is tight.

The pick-up element of the lifting device is a large steel yoke-hook welded from simple structural shapes and carried by a monorail hoist. When removing a battery from its compartment in a baggage carrier, the bottom of the yoke-hook is slid into the compartment under the battery. A rectangular centering plate on the bottom of the battery fits into a recess in the plate welded between the two arms of the yoke-hook, and acts as a safety device to prevent the battery from shifting.

After positioning the rig, the battery is lifted slightly by the hoist, moved horizontally out of the compartment and transported on the monorail to the charging racks. Because of the large number of trucks, battery changing is staggered. Not more than 2 trucks are in the battery room at a time. Each truck battery changed every other day.

Picture by courtesy of Gould-National Batteries, Inc.

Plant Maintenance Show

(Continued from page 11)

The Size of Maintenance

Factory upkeep in manufacturing industries cost 10 and one-quarter billion dollars during 1954, L. C. Morrow, general chairman of the Plant Maintenance and Engineering Show, told the show's opening session.

Mr. Morrow, who called his multi-billion dollar figure "conservative," said the total estimate was based on a study of plants all over the country. He said that a general average of all industries showed at least *one in every 12 employees in manufacturing plants was concerned solely with upkeep.*

Maintenance employees, who number about 1 and one-third million, have total earnings of about 5 and one-half billion dollars, Mr. Morrow said. An additional 4 and three-quarters billion is spent for materials and equipment, according to Mr. Morrow. He declared that the next big advances in maintenance will consist of placing the work on regular schedules, of standardizing work routines and in cost controls.

And Its Future

Factories are getting so automatic and the costs of keeping buildings in repair are rocketing so high that the factory of tomorrow may be out of doors.

That's what W. E. Chandler, plant engineer, Monsanto Chemical Corp., St. Louis, told engineers at the show. The best way to cut the repair cost is not to build a building, according to Mr. Chandler. "The petroleum industry has been a pioneer in this field. The chemical industry is moving in that direction."

Where the whole plant cannot be dispensed with, Mr. Chandler suggested such things as windows and doors be eliminated by the architect. These cost money to keep up and windows may not be needed in an air conditioned plant. As for paint-

ing the outside, another costly item, Mr. Chandler said glazed tile would eliminate the need for the painters.

"Building maintenance represents an estimated 10 percent of plant maintenance costs. Therefore, it lends itself to long range planning and program development," he added.

And Present Problems

The concept of preventive maintenance to avoid breakdowns rather than a program of repairs only in emergency cases has been so well told to American companies in the last 5 years that the time has arrived for a new approach, Herbert N. Johnston, plant engineer, Philco Corp., asserted.

He asked for a program of "balance maintenance" which would be preventive in part and corrective in part. He said that such cost factors as production down-time, physical depreciation, and fire and safety hazards should be balanced against high maintenance cost to determine how much should be spent on a balanced program.

A plea that maintenance be recognized as part of the "industrial team" alongside other important departments of a company was voiced by David J. Godschall, plant engineer, Heintz Manufacturing Co.

"Your sales department requires a well-engineered product for successful sales. Your production department requires an ingeniously engineered process for maximum, economical production. This engineering is always supplied. For the same, obvious reason, maintenance people want good maintenance engineering applied to their operation," Mr. Godschall said.

Plant engineers should encourage, rather than fight, good accounting procedures for their department, R. E. Stroppel, plant engineer, Tool Gear and Pinion Co., declared. "Most plant engineers stand in absolute awe of the complicated operations of accounting departments. This is the reverse view that I take. Everything pertaining to plant maintenance has its beginning in the plant maintenance department. It becomes clear that, if we are to be accountable for everything we do, then we must set up an accounting system we can understand to help us do a better job," Mr. Stroppel said.

And Solutions

Precision in maintenance methods is replacing haphazard emergency operation, O. W. Graveley, director of maintenance, U. S. Department of Defense, reported. "More attention is being paid of late to the use of punched cards systems as a means of providing rapid and effective methods of recording, analyzing and reporting maintenance activities," Mr. Graveley declared. The information, he said, can be used for personnel requirements, budget preparation, and projecting future work loads.

S. C. Read, director of construction and maintenance, Jones and Laughlin Steel Corp., said mechanization of maintenance functions is being speeded in the steel industry. "Recently, the demand for steel has not been of the volume to maintain production at the top rate, and plant maintenance people are being required not only to improve maintenance performance, but also to reduce costs," he said. "The pattern and function of maintenance organizations at many steel mills have been studied in the light of modern management principles."

New fire fighting techniques are needed in modern factories, H. B. Duffus, accident prevention administrator, told the Show's visitors. "As our manufacturing buildings become longer and wider, increasing the manufacturing area under one roof, we must reappraise very carefully our plant fire defense system. The several mediums used to get equipment to a fire must be evaluated in the light of distances to fire hydrants, obstructions caused by long conveyor lines and extended work stations. Wheeled hose reels, located inside the building, are replacing the hose house in many large area buildings. The small compact fire truck that can speed equipment down the manufacturing aisle has many advantages over the larger, conventional fire truck," he said.

CALL THE SANITOR!

UNDERTAKERS are called morticians, chorus girls want to be known as chorines, and press agents are termed public relations counsellors. Now it's the janitor's turn.

Sanitation engineers at the Plant Maintenance & Engineering Show in Chicago, anxious to improve the morale of the men who sweep the floors and scrub the walls, have come up with the name "sanitor" for the man who keeps the factory tidy.

And People

Personality characteristics of the factory maintenance crew are as important as craftsmanship, maintained L. E. Clover, manager, plant engineering and maintenance services, General Electric Realty Corp. In a session devoted to the human relations of maintenance, Mr. Clover pointed out that unlike production workers, the maintenance men are frequently on their own and sometimes must make decisions which disagree with those of production supervisors.

"When the maintenance man incurs the displeasure of a production supervisor, he must have the moral integrity and intestinal fortitude to make a complete report for management's decision. Maintenance men frequently must work with outsiders. Furthermore, maintenance mechanics are observed directly by top brass and visiting dignitaries during emergency breakdowns or plant inspection tours. The impressions left with such folks will depend upon the personal quality of the maintenance man," Mr. Clover said.

Robert E. Horstman, factory manager, Robbins & Myers, Inc., urged maintenance men to be more cheerful and polite in order to maintain good worker morale in factories. He said the maintenance crew must be particularly aware of "factory gripes."

"Let's suppose a maintenance man is checking a complaint and his first remark is, 'What's eating

you guys?' or suppose his opening line is, 'What can I do for you?' If you were the worker, which remark would be better for your morale?"

Getting the highest production from a skilled maintenance worker requires a different approach than that used for a worker on a production line, declared Richard S. Grant, plant engineer, Owens-Corning-Fiberglas Corp.

"The motivation of craftsmen differs from that of production workers. The craftsman prides himself in knowing how to do a job and resents a foreman telling him in detail just how a job should be done. In order to get work output from his men, the foreman should show confidence in the craftsman by assigning a job and leaving the details to him.

Thomas D. McMahon, director, labor relations division, National Biscuit Co., New York, felt that it is essential to have supervisory personnel well informed on the basic provisions of a labor contract if the company is to get along with unions.

"I do not mean that all your supervision, particularly the lower echelon, has to know every word of your labor agreement. However, they should be informed on the things that come up every day, like seniority, distribution of overtime and union jurisdiction," Mr. McMahon said.

And New Equipment

The phrase, "like working in a boiler factory," may soon lose its meaning if a noise deadening device on display at the show is adopted by factories.

The noise deadeners are box-like objects about 2 feet long and are intended for factories where high, irregular ceilings make it impossible to use ordinary acoustical insulation. The boxes may be grouped in clusters to deaden the sound over a particularly noisy spot.

Another type of insulation, for steam or hot water pipes, is made easier by another development. Instead of the conventional method of wrapping insulation around pipes and then strapping it down, one company is showing insulation which can be sprayed on. The substance foams up to 20 times its original thickness and prevents heat from leaking.

Still another innovation is an industrial development of the Chinese finger puzzle, in which the fingers are tied together by a web-like device becoming tighter the harder the fingers try to escape. The same principle is being used to tie hoselines together. Instead of clamps, the hoses are connected simply by pushing them together.

Telephones are going fancy in factories, too. They are being manufactured in different colors. This development has not come about because factory bosses are growing soft. The different colors are used to reach maintenance crews when emergencies come up, to report a fire, and for similar purposes, each with a differently colored telephone.

Another protection against fires just developed is a fire engine, completely equipped with hooks, ladders, fire hose, water pumps, and fire-smothering smog, which is so small it can race up factory aisles. Built on a 72-inch wheel base, it can turn in small areas and put out a dangerous fire which could wipe out a plant before the usual equipment reached the spot.

Looking toward the day when factories become completely automatic, another exhibitor displayed a device which recognizes when a motor is vibrating too rapidly. The device shuts the motor off and rings a loud alarm to call the repair man. The same company showed a new type of electrical insulation which uses plastics to prevent motors from burning out. The new material is said to make motors last 50 percent longer.

A new type of flooring was also on display. This wood is said to be stronger than concrete. Its strength lies in the fact that the grain of the wood is used edge-wise instead of cross-wise, as is customary in most floors. This wood is also being tested for the floors and walls of railway boxcars which must be able to take strong pounding.

For smaller institutions, and restaurants, a water heater manufacturer is showing a unit which delivers hot water at 2 different temperatures. Thus, water can be kept at 140 degrees for general cleaning and at 180 degrees for dishwashing, through a single heater.

The janitor of today no longer pushes a broom—he drives a 6-foot automobile around with brushes and vacuum pumps. A new wrinkle appeared at the show which can dry-scrub grease and oil off a factory floor without the use of water. Another company has a portable steam nozzle which not only cleans walls but dries them in 50 percent less time than conventional models.

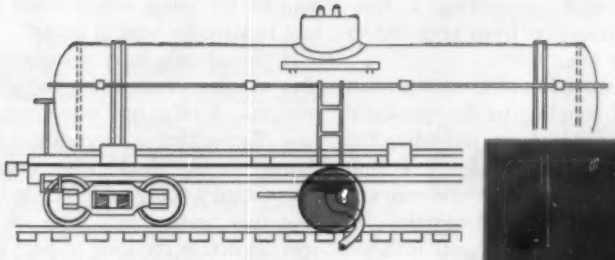
Paint manufacturers have come up with a number of improvements. One company showed a paint which peels off like pressure tape if the paint gets dirty or if it is carelessly painted on to the wrong spot. Others are showing color schemes which reduce worker fatigue and concentrate his attention to prevent accidents. Other paints, for outside masonry, have been developed to prevent water and wind damage even in hurricanes.

A new plastic window which also resists hurricanes was shown. In the display is a section of window which survived Hurricane Hazel while glass was blown to bits. In the display, a monkey wrench hits the window every 10 seconds without breaking the pane.

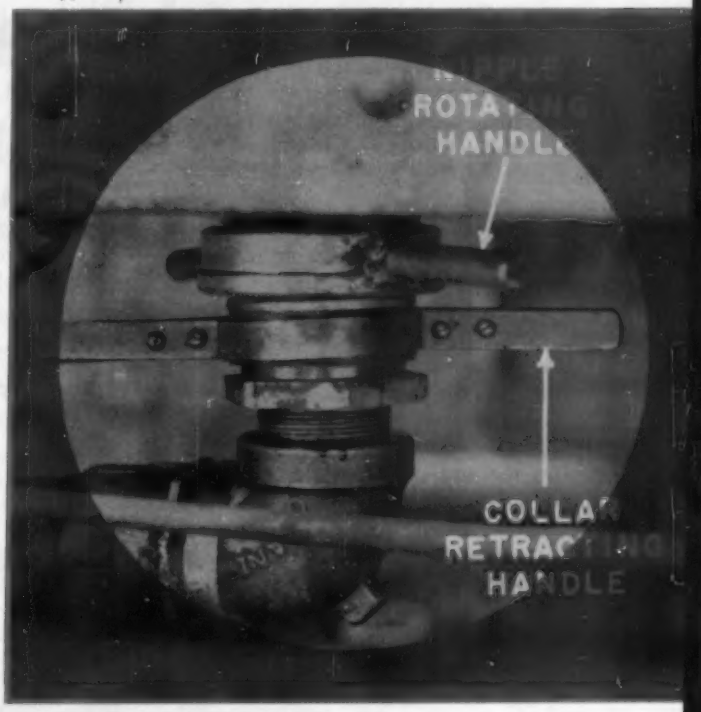
Another manufacturer exhibited a new check-out system for controlling tools and stores borrowed from the tool crib.

Many, many more interesting developments for better maintenance appeared at the show than there is room for us to list and describe here. Some of these developments have appeared recently in the columns of our *"What's New"* section and many are in the page 27 story this month. More will be published next month and in the future until we have covered all the advancements that filled this 6th Plant Maintenance and Engineering Show.

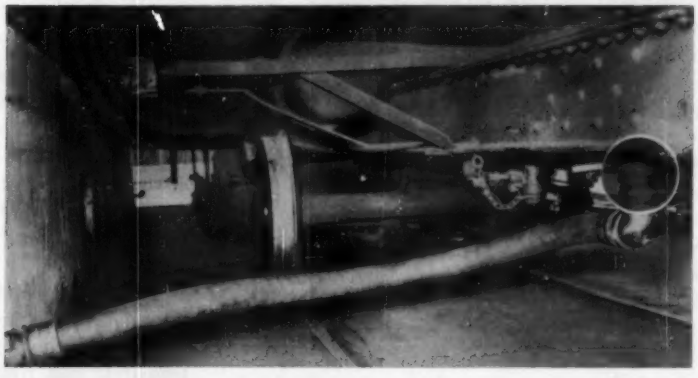
Picture by courtesy of Clapp & Poliak, Inc.



Discharge fitting on underside of tank car (left) is shown in close-up (below), with flexible hose quick-seal coupling detail.



TIGHTENING UP ON UNLOADING DANGERS



Flexible hose connects discharge fitting from tank car and tank inlet on building in picture at left. Quick-seal couplings on both ends of hose permit rapid connection and prevent oil leakage.

A WAY TO CUT DOWN the labor and increase the safety of an operation common in many industries—the unloading of tank cars—has been found at U. S. Steel's Homestead Works. Largely responsible for this advance in tank car unloading is a unique hose coupling.

One of the largest steel mills in the world, the Homestead Works requires lubrication oil in tank car lots. This oil is delivered by running the tank car alongside the maintenance stores building and unloading the car into storage tanks in the basement. This has required connecting a flexible hose from the discharge fitting underneath the car to the inlet fitting in the building wall.

The Homestead Works originally followed the standard practice in tank car unloading—that is, connecting the flexible hose to the tank car by a threaded coupling. This meant using a large wrench in the restricted space below the tank car. Coupling the connecting hose to the tank car was always a laborious job that often took 2 men half an hour. Also, since the sealing action in the threaded coupling is produced by two flat, metal surfaces in tight contact, the threaded coupling had to be screwed on extremely tight. Otherwise, oil leaking from it made the

space near the building very slippery and presented a serious safety hazard.

By replacing the threaded coupling with a quick-seal coupling the time for this hose-to-tank car connection was reduced to a few minutes. Even more important, safety was increased, because the new coupling eliminated leakage at the hose-to-tank car connection.

The labor saving and leak-proof characteristics of the new coupling become clear from a glance at the photographs. When the nipple is inserted in the coupling and the collar released, the nipple end of the coupling sits solidly against the seal ring. The coupling becomes sealed the instant the coupling is fully closed. Also, when fluid pressure is in the line, the seal ring's lips are expanded and pushed against the facing ends of the coupling. This makes the seal tighter as pressure inside the line increases.

The collar arrangement in this coupling permits a full swiveling action. That is, neither end of the coupling has to be twisted to connect or disconnect the coupling. This absence of twisting enables one man to engage or disengage the coupling. The absence of twisting also prevents kinking—the action which generally starts hose failure.

These features of the quick seal coupling are taken advantage of at the Homestead installation. Because most tank cars are equipped with a permanent threaded discharge fitting, the Works uses a threaded quick-seal coupling nipple that can be screwed on to this fitting. By providing handles on this nipple, it can be screwed on without using a wrench, which can be done by one man instead of two as the threaded coupling required—one to hold the coupling, the other to operate the wrench.

The quick-seal coupling body, attached to the flexible discharge line by an elbow fitting, has handles attached to the collar so that it can be easily retracted. This permits slipping the coupling body over the nipple—an operation that takes only seconds and can be done by one man. The coupling collar is then released, locking the coupling ends together and completing a leak-proof connection from tank car to discharge line.

The change from the conventional threaded coupling to the quick-seal coupling for tank car unloading has eliminated this cramped half hour job for two men. Now one man can do it easily in several minutes. In the few years since it was installed the new coupling has effected an impressive time-saving in the job of connecting tank cars for unloading. By eliminating leakage, it has removed a safety and fire hazard from oil drippings at the unloading point.

Pictures by courtesy of Titeflex, Inc.

We Asked Our Employees
(Continued from page 13)

4. All of us get a tremendous boost in seeing our creative thinking put into operations.

5. We have added an employer-employee morale builder.

6. We have a powerful motivator in individual financial consideration.

From an economic point of view, we have saved or made more than 100 thousand dollars and will do even better in the future. These unspent dollars have been derived from many areas. We have reduced tool costs, eliminated many unnecessary operations, cut paper work cost and reduced safety hazards, just to mention a few things. I could go on and show many specific applications where economies have been brought about. In many instances these suggestions have not called for a grandiose re-arrangement of a plant layout, but we are keeping our operational stethoscopes tuned to pick up a murmur which can easily develop into a major change for improvement.

One point seems clear and unfortunately so. Each of us in our respective jobs sometimes become so engrossed with the trees that we fail to see the poison ivy growing around a dead stump. Who is in a better position to recognize these small annoying factors than the man on the job? He lives with his problems day in and day out. He knows his operations. Does it make sense to hire a man for his hands and in effect tell him to leave his head at home?

If you already have a suggestion plan or are contemplating installing one, may I offer one other suggestion. Remember a suggestor is not "some dumb cluck who doesn't know what's going on." While it is true that he may lack some of the specific details required to present a complete proposal, he may, if you will hear him out, have the very idea you are looking for. Turn the tables around when it comes to operating a machine and he may have the same thoughts about you: "some stupid engineer who has it all in his head and nothing in his hands." In other words, don't become such an expert you can't listen to someone else.

You can gain something else through an employees' suggestion plan. If the idea for improvement comes from the area affected and the idea can be used, one half of your problem is completed. You have a workable idea and the greatest retarder of progress is on the way to being overcome. I refer to resistance to change. It's an old story—"If it's your idea it might work, but I doubt it; if it's my idea I know it will work."

Why not capitalize on a natural means to a common end: Safer and more efficient operation through group participation with a minimum of resistance. Also, there is less fear in the minds of workers that some engineer is trying to eliminate jobs, if the original idea comes from the man affected.

There is a tremendous source of information waiting to be tapped if we but set up a mechanism to let information flow freely in both directions. Once this plan has been set up it must be maintained in proper order and fairly administered. While it is not the answer to all problems, an employees' suggestion plan is a step in the right direction. Everyone stands to gain through an exchange of ideas.

Drawings by courtesy of Thompson Products, Inc.

From an address delivered at the Packaging Materials Handling Short Course, Department of Mechanical Engineering, University of Illinois.

Learning..... the hard way

IT'S HARD TO REALIZE . . .

. . . THAT MANY metals are poisonous if the fumes are inhaled or the dust swallowed. Included are such metals as arsenic, cobalt, cadmium, mercury, zinc, lead, chrome, and magnesium. Whenever a person is exposed to dust or fumes from metals his lungs should be protected with an airline respirator. Men in this type of work should observe the strictest sanitary rules in regard to personal cleanliness and frequent change of clothing.

In one case we know of, a repairman in a body shop was engaged in spraying molten lead and tin on a car body. After a few months of this type of work, he developed acute lead poisoning. He had inhaled a certain amount of the lead fumes and the fine metal spray had accumulated on his face, hands and clothing.

THE SOUND OF DEATH . . .

WE HAVE HEARD much recently about the workmen's compensation costs of noise. We have only occasionally heard about the fact that death can result from noise in industry. Not cumulatively, but suddenly.

Recently a workman in a machine shop was struck by a swinging load and killed. The crane operator had sounded his warning bell, but apparently the man had not heard. Ironically enough, the workman had complained the day before that he could not hear orders or even conversation very well because of the noise in the shop.

For maximum efficiency and safety, set noisy machinery on dampeners and cover solid flat walls and ceilings with sound-deadening material. In the top of an open shop hang baffles made of sound absorbents. When the number of noisy machines is not extensive, they can be isolated from the rest of the plant by installing them in sound proof rooms or booths. Square cut gears should be replaced with noiseless gears and all loose bearings tightened.

TILTING THE BALANCE . . .

A WORKER WAS placing a roller under a large, tall crate, which was being tilted on one end by a fork-lift truck. The crate, which weighed more than a ton, toppled over and crushed the worker to death. Each man in the operation had committed an unsafe act: the fork-truck driver by lifting one end of the crate instead of the whole crate; the worker by taking an unsafe position near the crate. Here was an unstable unwieldy package being moved by two men without the proper hoisting equipment.

What should management have done about it and what can be done now? Impress workers with the importance of following safe practices. Provide better materials-handling equipment for such packages. Standardize shape, size and weight distribution of parcels of freight.

THE WEIGHT LIFTER

A DELIVERY MAN recently sustained a serious back strain while lifting and carrying a quarter of beef from his truck to the market. Fortunately, in the meat packing industry much of this lifting has been eliminated by overhead monorails that can transfer beef from the truck monorails to the market monorails. Apparently this man was either showing off, or working without the proper tools. At any rate, he should have had someone else help him with the heavy load.

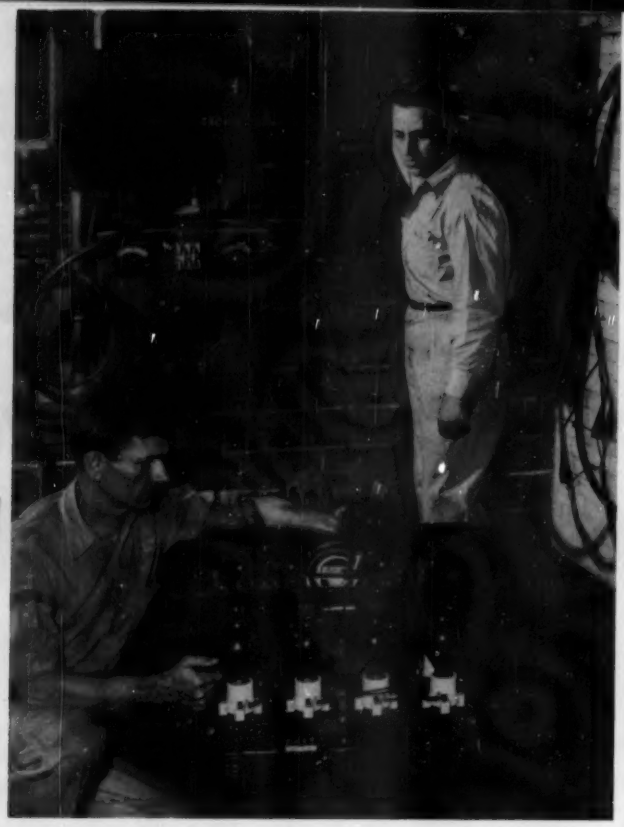
Like so many accidents this one applies to other industries as well. The best prevention of this sort of accident is proper tools and help, anywhere. The man who tries to manhandle more than he can easily do is asking for trouble, both for himself and his employers.

INSPECTION SAFETY? YES, IT'S NECESSARY TOO

RECENTLY TWO MEN, while cleaning the mud drum of a boiler were severely scalded, one of them seriously, when live steam rushed into the drum through an open blow off valve. This happened when a fireman attempted to blow down an adjacent connected boiler that was in service. Never enter a boiler until you are sure all valves are closed and locked. In addition a sign warning that men are working inside the boiler should be hung where it can be readily seen.

This boiler accident points up a safety hazard that is often forgotten. Any inspection is made with the possibility in mind that there may be a hazard present . . . else why the inspection? Since this is true the inspector should be doubly careful to protect himself against the very hazards for which he is inspecting.

Part II False Starts,



By PAUL C. ZIEMKE

LIKE THE EXPLOSIVES engineer who wants no part of grounded power circuits to detonate his important underground blasts, lest the grounded current seek a shunt path around his detonators, so too the cautious electrician resorts to the use of a transformer to isolate his important control circuit from the normal power supply to his motors. With this transformer arrangement, faults in the supply current are not common to the control circuit. The change is not costly since a 25 VA transformer will readily energize the actuating coil for a size 0 magnetic starter.

In addition to being isolated from the line current, the reduced voltage of the transformer's output tends to develop less insulation failure in the face of adverse operating conditions. Accordingly, it renders longer troublefree service. For those circuits operating on 230 volts the best expedient is to install a 1 to 1 ratio transformer to achieve isolation. This saves the installation cost of a new magnetic switch coil which is a "must" with the step-down from the 460 volt line current and results in 115 volts for the secondary. With both conversion projects it's obviously necessary to change the magnetic switch coil and push button circuit to the secondary of the transformer.

Ground Detectors Prove Valuable

Modern practice often tends to ground feeder and distribution circuits. A grounded neutral affords greater safety, reduced maintenance and some times greater reliability of service.

The voltage from line to ground in ungrounded circuits is normal line voltage divided by 1.73. Yet a ground in an ungrounded circuit may produce voltage several times the line to ground value during switching operations or arc restriking. This overvoltage can readily damage valuable equipment through flashovers and resulting fires.

Maintenance men can usually define the location of grounds in an ungrounded circuit, although it often proves to be a long, tedious operation. An advantage with an ungrounded system is that you may select the time you wish to cut off the power to probe for the grounded spot. On a grounded circuit the power is automatically cut off when a ground occurs. And, while the search for the defective insulation may be short as compared to that of an ungrounded circuit, it may cause a power interruption at some inopportune time.

Furthermore, it is possible for two grounds in a grounded service to interrupt two services. Thus the choice of one system over another depends on how vital the service is and how soon you can trace a defect and get it repaired.

The National Electrical Code stipulates that the over-current device for electrical loads be located in the ungrounded conductors. For the engineer who is contemplating the grounding of one leg of his service this can mean a lot of work, especially if his installation involves a large array of motors. Each fuse must be replaced with a section of solid metal of comparable cross-section and securely sweated into place to develop a low resistance conductor. He may then also find a lot of care-

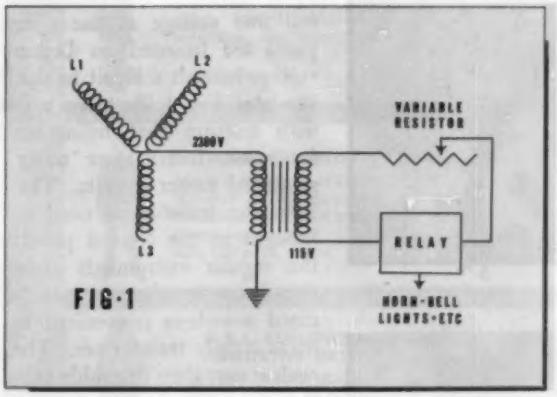
Electrical Grounds, and Accidents

less Joes using his neutral for case grounding; and, what is even more damaging, using the neutral as a negative return for arc welding operations.

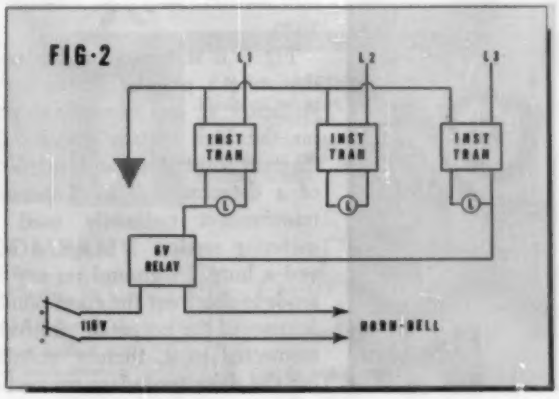
Vibration Troubles

A prolific cause of ground faults is building and equipment vibration. One plant experienced so much trouble they were forced to use the heroic device of pulling old rope in with the conductors to damp out the vibratory motion which beat the insulation off in a matter of weeks.

Packing the conduit, of course, was not the complete answer. The more realistic approach was the provision of larger, broader foundations for the crushers, ball and rod mills, plus shaker type slime tables. These new foundations were isolated from the plant's concrete floor by tar-treated felt strips; and, the smaller equipment, resting directly on the floor, was equipped with shock-absorber type mounts now available in numerous sizes and shapes. Refastening the entire conduit supporting structure along with the

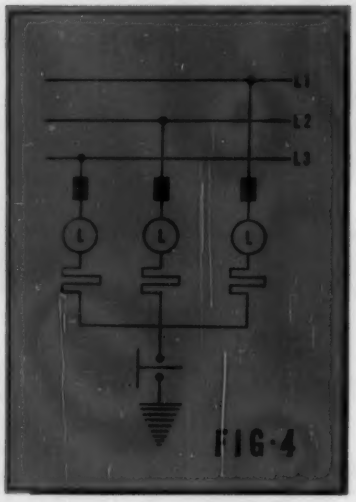


FIG·1

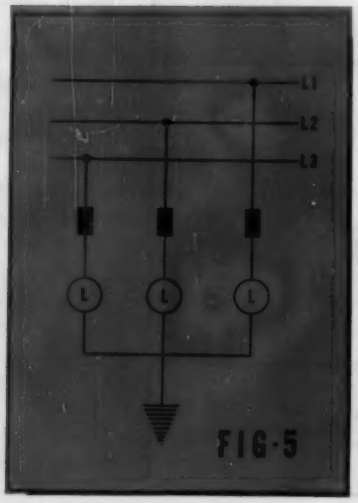


FIG·2

FIG·3



FIG·4



FIG·5

conduits completed the improvements.

That troublesome installation taught a hard lesson to the advocates of the grounded neutral system, since each time a short circuit to earth occurred the circuit had to be isolated for repairs until the fault was corrected. When an idled circuit served a process vital to the flow sheet, somebody sweated while the work was in progress. Conversion to an ungrounded system permitted leisurely repair work that was delayed to off-shift periods when production slow-downs were not a factor. Of course, the argument for grounding low voltage systems is to reduce the over-voltage failures that can occur in motors and allied equipment. These surges may come from lightning, switching large blocks of power on primary circuits, intermittent grounds on ungrounded neutral systems, or resonance effects resulting from several causes.

Ground detectors are extremely essential with ungrounded systems. The electrostatic types which require full line voltage at the operating panel are frowned on because of voltage hazards difficult to shield or insulate. Fig. 1 illustrates a system with features that recommend it for most installations using ungrounded power circuits. The lead from the transformer need not be brought to the control panel with the regular instruments since the step-down transformer may be located anywhere convenient to the main supply transformer. The secondary may then be readily extended through normal wiring to the variable resistor, relay and warning devices.

Fig. 2 is still another illustration depicting a popular device for installation at any convenient point on the high voltage circuit. The diagram illustrates the construction of a detector unit of 3 potential transformers ordinarily used for metering service, 3 lamps, a relay, and a horn. A ground on any line tends to short out the corresponding primary of the potential transformer connected to it, thereby unbalancing the delta secondary connections through the lamps. The developed circulating current flowing through the coil of the relay closes same and sounds whichever type of alarm one's fancy may select.

Detectors Aid Preventive Maintenance

Whichever type of detector is employed, they all, within the limits of their scope, serve as watch dogs to keep constant check on the condition of the insulation. Many faults are of the incipient type that begin innocently enough with hardly a ripple appearing on the smooth functioning control board. If detected in time fault troubles, like human diseases, can be coped with so that serious shutdowns can be avoided. Usually, the condition does not worsen speedily because of the slow infiltration of the deteriorating factors, thus permitting the engineer to marshal his forces for convenient week-end or holiday wire or cable replacement.

In addition to the switch panel mounted instruments, one large government munitions plant installs fused receptacles on all principal disconnect panels. These are visited monthly by an inspector who carries a portable instrument equipped with a suitable connector jack. By this means all of the distribution is kept under close surveillance at all times. As I said above, when the distribution is operated ungrounded, a single ground fault, even if "solid" as the trade terms it, can be continued in service for an extended period of time. It is only when the second fault occurs that things begin to happen—fast! Long before that fateful period of accounting, the plant engineer has relayed the load to other lines and spared himself the ignominy of a shut-down.

For the increasingly popular 460 volt, 3 phase service, a very popular device is diagramed in Fig. 3. It employs six, 230 volt lamps arranged in a Y formation with the ground connection taken off at the center.

Fig. 4 indicates a gadget for application to power services above the conventional 460 volts. Resis-

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Here's your *one source of supply* for everything in personnel protective clothing . . . from hoods right down to safety spats . . . in plastic, chrome leather, duck, asbestos, rubber and synthetics.

Because M.S.A. offers a complete safety wardrobe, you get exactly the item you need, in the material best suited for the job. Essential, too, are the comfort and durability qualities of M.S.A. safety clothing. Our tailoring is designed to meet worker's demands for freedom-fit, and, at the same time, provides maximum wear. Described here are a few of the items in our safety clothing line. Write for complete details.

M·S·A DECONTAMINATION SUITS

Chemical-Type is made from flexible butyl-fairprene material. Complete body and breathing protection where extreme chemical hazards exist. Air, cooled or heated, is supplied to both suit and hood through a combination hose and safety cable entering suit from back. Exhaust air is vented around neck area. Suit takes on balloon-effect when air enters. This provides greater comfort, working freedom. Also available—M.S.A. Acid-Type Suit, made of neoprene-fairprene fabric. Same features as Chemical-Type. Both available in small, medium, large sizes.

M.S.A. FIRE SUITS
Available in glass fiber cloth, coated inside with neoprene, aluminized outside. Also hoods in same materials.

M.S.A. HOODS
Protection against acid splash, caustics, corrosive liquids, gasoline, vapors, fumes, dusts. Available—plastic, rubberized cloth.

M.S.A. CHEMKLOS
Made throughout of Dynel. Resists acids, caustics, mildew, moths. Last longer, smart appearance. Coveralls, trousers, shirts.

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Made of asbestos, chrome leather, flame-proof duck. Comfortable fit, easy to get into or take off. Wire stitched seams.

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From full-length to finger tip in sizes. Leather, wool felt, asbestos, and neoprene coated. Flexible, comfortable, durable.

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(For details, use Key # C-10 on card on page 75)

tors of the proper size are coupled with the 230 lamps; and, in conjunction with the push button switch, make up a serviceable unit.

Fig. 5 pictures the simple but dependable 3 lamp arrangement where 230 volt service is being monitored. A feature of this little gimmick is that several lamps brighten as others go progressively dim. With the circuit free of ground the full lamp bank burns at one-half voltage.

Human lives are too often at stake, where electrical safety is concerned. Grounds, short circuits and false starts in machinery can be prevented only by maintenance.

Pictures by courtesy of Tennessee Valley Authority.

The first part of this article appeared in the February issue of S. M. & P.

Ten Problems of Industrial Truck Maintenance

THE EXPERIMENT in bringing fork truck maintenance training right to the door of the customer has been highly successful, according to the Clark Equipment Company, whose Mobile Service School recently marked the completion of its first year's travels. The school visited 43 cities in 24 states and three Canadian provinces. More than 4000 fork truck operators and maintenance men from some 1500 companies attended the training sessions to receive instruction in the proper operation and maintenance of the company's gas and electric fork trucks, straddle carriers and powered hand trucks.

The Mobile School supplements a comprehensive three-week maintenance course held regularly at the Service Division headquarters in Jackson, Mich. Clark has announced that the school will be kept on the road for another year.

Ten Questions

Thousands of questions on fork truck maintenance were asked and answered during the sessions. Listed here are ten of the most-asked questions, and Clark's answers:

Question 1: Why do you recommend that engine oil be changed so often? Engine oil should be changed every 40 to 50 hours of operation. This isn't really "often" if you compare it to your automobile. The number of RPM's the fork truck engine turns over per hour is equal to an automobile operating at 40 miles per hour. Therefore after 40 to 50 working hours your fork truck engine has been subjected to the same wear as an automobile traveling 1600 to 2000 miles.

Question 2: Is it necessary to change the oil filter every time the engine oil is changed? Yes. The oil filter cartridge can do only so much work. Even if it is clean on the outside, it becomes plugged on the inside with impurities, foreign particles, water from condensation and dilution from the crankcase. Leaving a dirty filter in when oil is changed would contaminate the new oil.

Question 3: What grade and type of oil should we use in our fork truck engine? For temperatures of zero and below use an SAE-10 oil. For temperatures from zero to 32 degrees, use an SAE-20. For temperatures above 32 degrees, use an SAE-30. The oil we recommend is the heavy duty, high detergent type known as an MS service oil. One word of caution: Never mix an MS oil with a straight mineral type of oil.

Question 4: What type and grade of gasoline should we use? If by "type" you mean brand, we don't recommend any one in particular. We DO recommend use of a premium grade because you'll get better engine performance. A premium grade of gasoline has fewer low burning carbon ends which can be deposited in cylinders and on pistons to interfere with proper engine operation.

Question 5: Why do you use the type of pump that you do for your hydraulic system? The vane type, gear driven, positive action pump is efficient in operation and easy to maintain.

Question 6: How often and with what should we clean our fork

(Continued on page 34)

KEEPING UP WITH...

Recent Developments in Plant Maintenance

BUILDING & EQUIPMENT MAINTENANCE SERIES
other articles in January and February

DUAL-PURPOSE STEAM CLEANING COMPOUND

A STEAM CLEANING compound, "ST-35," can be used both as an additive to make steam cleaning more effective and also, when diluted with hot water, as a cleaning solution for factory and office floors. Made by John B. Moore Corp., it is a heavy duty detergent with excellent wetting and cleansing action, for removing dirt, grease and soil from metal, cement, stone, painted and lacquered surfaces.

It is said to be non-combustible and to create no toxic vapor hazards. Because of its highly concentrated form, shipping costs are saved. Uses range from steam cleaning of heavy mechanical equipment, through plant and building maintenance, to washing truck bodies and cleaning concrete floors. Available in 54-gallon and 5-gallon drums.

For details, use Key # PM-1 on Inquiry Card on page 75.

NEW MASONRY PAINT

AN EXTERIOR rubberized masonry paint is being marketed by the Pittsburgh Plate Glass Co. An unusual property of the paint is its ability to waterproof the exterior while it lets water, in the form of vapor, pass through the film from interior to exterior, thus preventing the formation of blisters which cause paint to peel.

The new product, a polyvinyl acetate formulation, will be known as "Cementhide Rubberized Masonry Paint." It is a water emulsion paint and requires no petroleum or coal tar solvents.

It is said to possess the same easy, quick-dry application properties as latex emulsion interior finishes. It may be applied by brush, roller coater or spray. No primer or sealer is required, and brushes or rollers may be easily cleaned in warm, soapy water. It will be available in eight colors and white. Many additional hues may be obtained by intermixing. The paint may also be applied to interior masonry surfaces provided hydrostatic pressure is not involved.

It is suitable for use on brick, stucco, concrete block, and cement-asbestos shingles. The finish is resistant to moisture and sunlight and provides protection against dirt collection and stains.

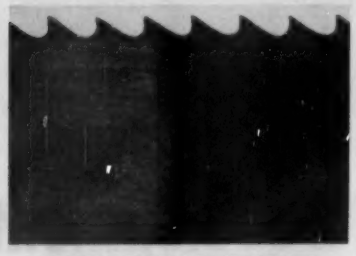
For details, use Key # PM-2 on Inquiry Card on page 75.

ALL-PURPOSE FLOOR MACHINES

VERSATILITY AND ease of operation are features of the Model 800 series of floor machines made by Finnell System, Inc. The carefully balanced motor-weighted design of the combination scrubber-polisher permits maximum efficiency and minimum fatigue for the operator.

With suitable accessories, the units can wet-scrub, dry-scrub, apply wax, polish, steel-wool, shampoo, disc-sand or grind. A safety switch is mounted on the handle, which can be adjusted for height. A simplified brush construction equalizes the flow of the scrubbing solution and reduces brush replacement. This model is available in three sizes: brush diameters of 15, 18 and 21 inches.

For details, use Key # PM-3 on Inquiry Card on page 75.



POWDER RUST REMOVER

A NEW NON-TOXIC rust remover, in powder form, is being produced by the By-Buk Company. By dissolving the powder in water, the strength of the resulting liquid rust remover can be controlled to meet any de-rusting or corrosion removing requirement for ferrous or non-ferrous metals. It is non-toxic, non-obnoxious, non-flammable, leaves no alkalies and requires no neutralizer. It leaves on the derusted surfaces a thin rust-resistant coat, ready—with no other treatment—for paints, nickel or chromium plating, galvanizing and other protective coatings.

The derusting action is very fast and reaches into inaccessible crevices, cracks and recesses. It is effective for removing corrosion from aluminum, magnesium, copper, brass, bronze, galvanizing, stainless steel, etc.

For vertical surfaces and large objects, such as machinery and structures, which cannot be submerged in a liquid bath, a thickening agent is added so the solution will adhere to such surfaces.

For details, use Key # PM-4 on Inquiry Card on page 75.

VAPOR BARRIER ROOF

FIRE-RETARDANT flexible material is being used in a new roof construction which may prevent future disastrous industrial fires. Developed by Lexsuco, Inc., the new construction utilizes a "vapor barrier" of Koroseal flexible material manufactured by the B. F. Goodrich Company Industrial Products Division. The vapor barrier design prevents drippage of flammable asphalt or tar, and eliminates all combustible materials between roof deck and insulation.

A typical installation may consist of standard steel decking on which the vapor barrier is laid. The Koroseal used is a black opaque film, .004-inch thick, and comes in rolls of a convenient size for workmen to use. This is followed by a conventional roof insulation which is fastened to the steel deck by Lexsuco steel insulation clips. In the picture, a workman is applying an adhesive for lap-sealing the vapor barrier on top of the steel deck. To the left is fiberglas insulation topped by two layers of dry roofing felt.

For details, use Key # PM-5 on Inquiry Card on page 75.

SANITATION CART

A LINE OF Sanitation Carts is being introduced by the American Conveyor Company. Three models, each of which has been designed to serve a purpose, are available. Most popular is Model 2CF which is a two can cart approximating the width of a one can cart.

Swivel ball bearing rubber tire front caster wheel serves to provide short turning radius for cramped quarters. Spring loaded "J" hooks securely lock can to cart yet easily detach when removing can. Rubber tired spoke main wheels, paint coated galvanized can, dropside can handles and conveniently located broom holder are just a few of the standard features. The Sanitation Cart is the solution to the material handling problem of cleaning streets, playgrounds, parks, fairs, hospitals, institutions, industrial plants, auditoriums, warehouses, etc.

For details, use Key # PM-6 on Inquiry Card on page 75.

DUST-ABSORBING SANDER

A VACUUM attachment unit and a line of accessory dusting and cleaning tools have been introduced by the Atlas Floor Surfacing Machinery Corp. This "Atlas Floor-Vac" and the accessory tools are designed for the firm's Heavy Duty Floormaster Machines, which are used for buffing, polishing, steel-wooling, sanding, and other floor maintenance work. The vacuum attachment immediately picks up the dust raised by these operations and prevents it from settling elsewhere.

The vacuum attachment may also be used with accessory equipment for cleaning crevices, radiators, venetian blinds, window sills, and walls, etc. The extension hose is a 10′ flexible, heavy-duty section with an inside diameter of 1¼″. The wand consists of seamless steel, nickel-plated tubing, 52″ in length and 1¼″ in outside diameter. The vacuum motor operates on AC or DC at 12,000 rpm and 110–120 volts.

For details, use Key # PM-7 on Inquiry Card on page 75.

NEW FLOOR FINISH

A FLOOR dressing, called "Lab-Cote," is said to be hard, easy-to-maintain, and resilient. Chemical Service of Baltimore, Inc. claims that it protects all flooring surfaces with a clear, transparent film which resists soil absorption and has high anti-slip features. It is said to outwear wax dressings, remains buffable and can be easily removed. Samples are available.

For details, use Key # PM-8 on Inquiry Card on page 75.

NEOPRENE COATING

A THICK, paint-like liquid of high solids, "Magic-Vulc Neoprene Maintenance Coating No. 245-B," may be brushed or sprayed on most surfaces. No primer or accelerator is required. It is a "one-shot," or one-solution product, ready to use directly from the can. The standard color is black, but aluminum and other colors are available from Magic Chemical Co.

The dry film forms a tough, adherent protective coating which is resistant to water and chemical solutions under conditions of total immersion. It may be used for very severe service conditions and will adhere to metal, concrete, wood, plastic, glass and other surfaces. It resists the action of oils, alkalies, strong sunlight, sea water and many other corrosive conditions. The coating is elastic, as well as tough, and will not crack under extreme weather conditions and rapid temperature changes. The coating is easily repaired if accidentally damaged.

It is used for protection of steel structures or equipment, tanks, blowers, housings, ducts, fume hoods and many other types of industrial structures. It is also used as an anti-skid coating, caulking compound, sealing compound, formed-in-place gasket, and for resurfacing worn conveyor belts, for pulley lagging, for protecting boat bottoms, for repairing electric cable and wire insulation, and for protecting electrical equipment housings.

For details, use Key # PM-9 on Inquiry Card on page 75.

WAX APPLYING ATTACHMENT

A NEW WAX concentrate and patented applier to reduce floor waxing costs has been announced by Piatt & Smillie Chemicals, Inc. The "Econoplier," which fits any make

Edmont Case No. 502: Handling lumber, vitrified tile, etc., Edmont job-fitted gloves with coated palms outwore canvas up to 10 times, gave safer grip and protection against hand injury.

Safer work handling with job-fitted gloves

. . 3 TO 10 TIMES LONGER WEAR

No. 62W Grab-It rough rubber coated

By fitting the glove to the job, you can substantially reduce lost-time accidents due to hand injuries. At the same time, you effect cost savings of 40% to 70% through longer wear, and improve employee comfort and morale.

Edmont makes over 50 standard types of gloves, palm coated or fully-coated with Neox (reinforced neoprene), natural rubber or vinyl plastic coatings. There's a type for practically every handling requirement including resistance to cutting, abrasion, oils, greases, acids, caustics, solvents, degreasants, extremes of heat and cold, etc. Our laboratory also develops special types for special conditions.

No. 151 Plax plastic impregnated

Edmont Case No. 208: Handling explosives in fiber cases, Edmont palm coated Grab-It gloves outwore leather palm gloves 3 to 1 and gave positive non-slip grip at all times.

Edmont Case No. 336: In handling laminated plastic, leading appliance manufacturer found Edmont's new PLAX gloves (light plastic-impregnated fabric) outwore canvas 4 times, and gave better protection against sharp edges.

FREE JOB-TEST OFFER: Send us a description of your operation, materials handled and temperature condition. Without cost, we will recommend the correct glove and send free samples for you to job-test.

The Edmont Manufacturing Co., 1256 Walnut Street, Coshocton, Ohio

World's largest maker of coated industrial gloves, available through leading industrial suppliers.

Edmont

Edmont job-fitted gloves

(For details, use Key # C-11 on card on page 75)

or model of floor machine, enables the operator to buff and wax simultaneously. The motion of polishing mechanically spreads the wax concentrate immediately ahead of the polishing brush. It is said there is no drying time required, and no waste of material. The Econoplier is furnished to "First" Wax Concentrate users for $1.50 per year, under a standard lease arrangement.

The new "First" Wax Concentrate has been tested and approved by Foster D. Snell, Inc., consulting chemists and engineers, for use on asphalt tile. It is also suitable for use on vinyl or plastic tile, terrazzo, marble, magnesite, linoleum, rubber, hardwood, and composition floors.

For details, use Key # PM-10 on Inquiry Card on page 75.

LIGHT DUTY SCAFFOLD

A LOW-COST steel scaffold that provides platform heights up to 12 ft. is announced by Safway Steel Products, Inc. Permitting work as high as 18–20 ft., this light duty equipment is practical for outdoor or indoor use by carpenters, masons, painters, plasterers, electricians, sheet metal workers, roofers, etc. The new scaffold is sold as a "package" which includes: 3 rectangular 6-ft. frames, 3 tapered 6-ft. frames, 3 platform brackets, 6 rubber safety shoes, and 4 pivoted cross-braces.

To increase working efficiency on different types of jobs, these parts may be assembled in five ways. Individual frames are light and well-balanced, for easy handling and erection by one man. Frames, brackets and cross-braces are made of strong high carbon steel tubing. Rungs or cross members are welded. Parts may be transported readily and stored compactly.

For details, use Key # PM-11 on Inquiry Card on page 75.

PORTABLE UPHOLSTERY CLEANER

A NEW LIGHTWEIGHT portable machine for cleaning upholstery, stair carpeting, automobile and other vehicle interiors has been announced by the Multi-Clean Products Co. Called the "Professional," it is hand-sized, and has a power unit weighing only 6 pounds. The firm but gentle shampooing action of the Nylon bristles makes it safe for even delicate fabrics.

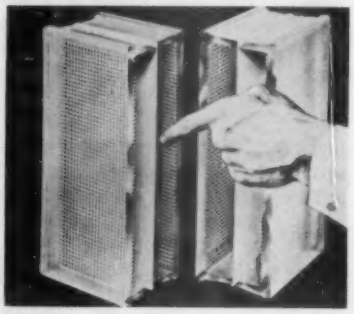
Important features include: Special pump built into the cleaning unit gives accurate control of solution flow at point of work; clear plastic hose from tank to unit gives the operator complete maneuverability and won't mar furnishings; powerful lightweight motor operates from any standard light socket.

For details, use Key # PM-12 on Inquiry Card on page 75.

INDICATOR GERMICIDAL CLEANER

A NEW GERMICIDAL all-purpose cleaner for industrial and institutional use has been developed by West Disinfecting Co. Called Wescodyne, this new product is also a detergent. As an all-purpose cleaner and disinfectant, this product has the unique property of visually indicating its own germicidal activity. In solution, it has a yellow-brown tint which persists as long as germicidal activity is present; when the color completely fades, the solution is no longer active and should be replaced. It is effective in both warm and cold water, and hard water does not impair its germicidal action, the maker states. Wescodyne is a disinfectant recommended for use in hospitals, schools, food-handling and processing plants and for general industrial use.

For details, use Key # PM-13 on Inquiry Card on page 75.



GLASS BLOCKS CONTROL SUN'S GLARE

DOUBLE CAVITY glass blocks for exterior walls and roofs provide a soothing glow of daylight even in the harshest sunlight. Made by Pittsburgh Corning Corp., and called "Suntrol," these hollow glass blocks have pale green fibrous glass diffusing screens sealed into their centers.

The two partial vacuums in the blocks keep out much of the sun's heat, and the psychological effect of the color is also important. The filtered light makes people feel cooler and more relaxed regardless of the temperature.

Suntrol is an addition to the company's line of functional glass blocks which send light rays where they are needed. Light directing patterns throw light upward toward the ceiling where it is reflected; light diffusing patterns distribute light in all directions; and special skylighting blocks spread even, comfortable lighting over wide floor areas.

For details, use Key # PM-14 on Inquiry Card on page 75.

CLEANER REDUCES SHOWER SLIPPING HAZARDS

THE USE OF a chemical compound, Saf-T-Klenz, being made available by Berman Chemical Company, in cleaning shower stalls and swimming pool decks, reduces the hazard of

slippery floors by removing the grease film. It furthermore minimizes the conditions that breed and spread infectious germs. This powder cleaner is simply sprinkled sparingly on a damp surface. After a few minutes for dissolving, it is mopped lightly and then flushed with clear water. Algae accumulation, lime deposits, iron rust stains, soap oil and body grease are removed by chemical action without hard rubbing.

Porcelain drinking fountains, wash bowls, toilets and urinals are similarly cleaned without effort. It is safe to use on glass, porcelain, china, marble, tile, terrazzo, vitreous, and concrete surfaces. The odorless cleaner contains no caustic, lye, soap or carbonate, and will not injure hands, clothing, floors or drain. Free samples available.

For details, use Key # PM-15 on Inquiry Card on page 75.

GROUNDED OUTLET BOX

A SAFE method for using electric hand tools, test apparatus, or similar equipment at remote locations is possible with the new Electro-Safe Outlet Box. It may be used to advantage for maintenance or service work, or for quickly providing safe outlets for a production line. Made by Dalco Mfg. Co., Inc., the box is of rugged steel construction, plated and painted to withstand rough usage. The standard unit has two T-slot duplex receptacles with provisions for fusing and grounding, thus protecting both the operator and equipment. An 8 ft. 3-conductor line cord is generally furnished, but the unit may be purchased less cord or with any special length cord as desired. Outlets other than T-slot can be provided to meet specific requirements. Measurements of the box are 5½ x 7½ x 2½. It is finished in gray-brown Hammertone and has a chrome-plated handle for carrying.

For details, use Key # PM-16 on Inquiry Card on page 75.

Stop dangerous handling of INDUSTRIAL LIQUIDS

You can stop dangerous handling of liquids and frequently reduce insurance costs in the process, by using Tokheim Transfer Pumps in maintenance work. Spilling, slopping, over-filling and dripping—constant enemies of safety—are easily prevented. Your plant can be kept cleaner. Work is speeded. Waste is halted. Accidents are prevented.

Business and industry are daily finding more uses for these rugged little Tokheim pumps. They are available with hose or spout outlets and other optional attachments. Pump operates on both forward and back strokes and is capable of delivering 20 gallons a minute. Will pump 'most anything that pours. Offered with alternate parts to handle special liquids. No plant should be without a battery of Tokheims.

Call your dealer, your Tokheim representative, or write factory for literature.

QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

General Products Division
TOKHEIM CORPORATION
Designers and Builders of Superior Equipment
1672 Wabash Ave. *Since 1901* Fort Wayne 1, Ind.
Factory Branch: 1309 Howard Street, San Francisco 3, California
Canadian Distributor: H. Reader, 205 Yonge Street, Toronto, Ont.

Gasoline Pumps and Accessories • Air and Liquid Dispensers • Specially Engineered Products

(For details, use Key # C-12 on card on page 75)

Recent Developments

IMPROVED WATERPROOFING

RECENT TESTS indicate the improved waterproofing qualities of Formula No. 640, a colorless liquid masonry sealer made by Haynes Products Co. The sealer is composed of eight microcrystalline resins in a mineral spirits solvent. The liquid penetrates deeply and the solvent evaporates leaving the pores filled with a plastic mass impervious to water and highly resistant to acids, alkalies, weathering and oxidation.

In the tests, a block of Bedford stone treated with the sealer was sprayed with water for 24 hours. The gain in weight of the stone from water absorption was 3/100ths of 1 percent.

For details, use Key # PM-17 on Inquiry Card on page 75.

ALL-DIRECTION WASTE CAN

A NEW waste receptacle, the Solar Jet, specifically designed for easy access from any direction, has been introduced by the Solar-Sturges Mfg. Div. of Pressed Steel Car Co., Inc. The self-closing waste receptacle has a dome top of stainless steel, which swings freely inside the outer shell. Because of this feature, it operates perfectly in any location and can be placed against a wall or in a corner, when space is limited.

The dome top, the only moving part, is securely attached to a ball suspension joint located immediately beneath the point of balance. Rigorous tests have proved its serviceability. Modern, handsome appearance makes the unit an attractive addition in any location. The outer shell of gleaming white baked enamel finish is light weight, easily removed. Inner container of heavy galvanized steel, with handle for easy emptying, rests on three stainless steel legs, which hold receptacle 7/8" off of ground or floor. Available in 30½" and 36" heights. Both sizes are 15" in diameter. Suggested locations are corridors, entryways, waiting rooms, sales floors, industrial plants, cafeterias and restaurants, public buildings, and near drinking fountains and vending machines.

For details, use Key # PM-18 on Inquiry Card on page 75.

RESURFACING MATERIAL

A NEW ready-to-use floor resurfacing material said to be smoother, easier to apply, and capable of withstanding heaviest traffic within one minute after application is announced by The Monroe Company, Inc. This plastic flooring, "Swift-Floor Medium," is the result of a new process which assures uniformity of every plastic granule. These granules are able to knit together much faster than previous types. The material also contains Cryptolite, a many-sided prismatic crystalline material, which is said to possess excellent adhering and binding qualities, and also to add greatly to floor strength.

A smooth, even floor can be laid simply by spreading the ready-mixed material, then tamping or rolling. The floor will withstand 50,000 lb. loads 60 seconds after application. Heavy loads are not required to compress the floor material. It can be applied over wood, concrete, brick or steel—indoors or out for patching, as well as resurfacing.

For details, use Key # PM-19 on Inquiry Card on page 75.

GERMICIDAL FLOOR WAX

A GERM-KILLING floor wax has been developed by Trio Chemical Works, Inc. Extensive tests by an independent laboratory indicated that a single application killed more than 99% of all the germs and bacteria found on floors, according to the maker.

In addition to its germ-killing properties, "Amazon Germicidal Floor Wax" is said to be non-irritating to hands, non-scuffing, water-resistant, non-flammable, slip-resistant, harmless to animals and people and is backed by the manufacturer's guarantee. Available in pint, quart and one-gallon sizes.

For details, use Key # PM-20 on Inquiry Card on page 75.

WET SURFACE ENAMEL

TWO IMPROVEMENTS have been made in the "Damp-Tex" wet surface enamel produced by Steelcote Mfg. Co.: 1. odorless properties, from the use of odor-free thinners and neutralizers, to prevent tainting of foods, and 2. a permanent non-yellowing white.

The enamel is for interior use and will adhere to water-soaked surfaces. It is resistant to mildew, gases and acids. The coating is used in breweries, paper mills, laundries, food plants, canneries, shower rooms, refineries, textile mills, etc. Available in white, black, aluminum and 14 colors.

For details, use Key # PM-21 on Inquiry Card on page 75.

RAPID WATER PICK-UP

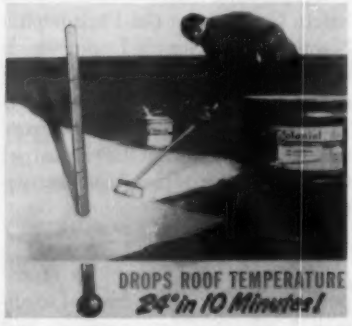
MAINTENANCE MEN for industrial plants, stores, office buildings, schools, hospitals and other large floor areas will find unusual features

in the "Rapid Dryer Water Pick-Up Machine" being marketed by Wells Research & Engineering Co. Attached to the front of the frame are two independent live-rubber squeegee blades, adjustable to from 2 to 4 foot widths, for covering odd shaped areas and uneven floors. The vacuum unit has a tank equipped with 4 independent rollers and capable of holding 15 gallons of water.

With this equipment, it is said the operator can dry floors as fast as he can walk, or 4000 square feet of flooring in ten minutes.

Suitable for all types of floors, including wood, cement, rubber, asphalt and Vinyl tile, marble, concrete, terrazzo, etc., this equipment is easy to operate and maneuver, and is versatile. It can be used as a regular vacuum cleaner by lifting the vacuum from the frame and setting it on its own castors.

For details, use Key # PM-22 on Inquiry Card on page 75.

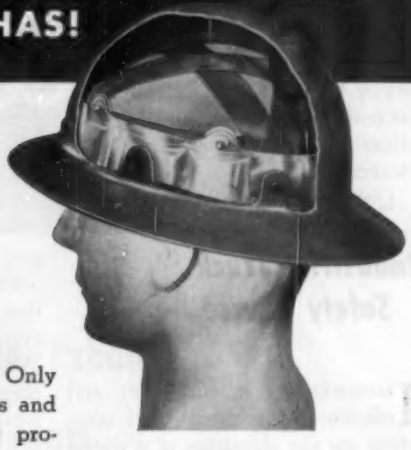


HEAT BARRIER ROOF

AN ALUMINUM asbestos roofing manufactured by Colonial Refining & Chemical Co. acts as insulation against hot sunlight. When the "3R Aluminum Roof Coating" is applied, building interiors are kept cooler. The material is applied in a one-coat brush application. In tests, roof temperatures dropped 24 degrees in ten minutes after application of the liquid aluminum. The aluminum reflects the infra-red rays of the sun and thus reduces the "heat load" of air conditioning systems or lowers the temperatures of buildings without air conditioning.

For details, use Key # PM-23 on Inquiry Card on page 75.

HERE'S WHAT WILLSON SUPER-TOUGH® HATS HAVE THAT NO OTHER SAFETY HAT HAS!

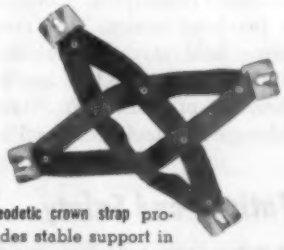


It takes more than a strong, tough hat shell to provide full head protection—*both external and internal!* Only Willson Super-Tough® Hats and Caps give you that *extra* protection!

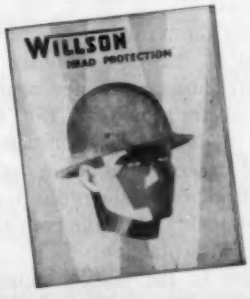
And that *extra* protection and wearer comfort is possible because of this unique, patented geodetic crown strap and pneumatic head band, developed by Cornell Aeronautical Laboratory, Inc.

Get the complete story on this new, revolutionary, scientific advance in head protection. Write for this new manual and catalog on head protection.

Super-Tough® hat cut away to show how the patented head gear fully cradles the head.



Geodetic crown strap provides stable support in all directions with no concentration of load in tie string on top of the head.



Patented pneumatic cushioned, all plastic head band providing scientific "metered air" shock absorption.

More Than 300 Safety Products Carry This Famous Trademark

WILLSON®

Leaders in Research and Development of Safety Equipment Since 1870

WILLSON PRODUCTS, INC., 207 WASHINGTON ST., READING, PA.

(For details, use Key # C-13 on card on page 75)

Truck Maintenance

(Continued from page 26)

trucks? We suggest a high pressure steam jenny. If not that, a good chemical cleansing agent that is non-explosive or has a very low flame test. It's important to keep fork trucks clean. Accumulated dirt cuts down efficiency. Remember, too, that there's a psychological factor involved. A dirty machine invites sloppy handling. A clean machine encourages good driving and careful attention. Fork trucks should be cleaned every week.

Question 7: Will maintenance help reduce accidents? Some, but not all. Properly scheduled, thorough maintenance will prevent occurrence of accidents due to mechanical difficulties. But by far the most accidents are caused through operator negligence. The only way to stop these accidents is through a driver training program which educates operators in safe driving habits.

Question 8: Do the forks of the truck require any special maintenance? No. Caked grease or dirt should be removed, and every 900 or 1000 working hours the forks should be checked for proper alignment.

Question 9: How often should wheel bearings be cleaned and repacked? About every 1000 working hours.

Question 10: Can you give us any general tips on how to make fork truck maintenance easier? Thorough check-ups every week or two—depending on the work-load of the fork truck—will enable you to catch the occasional minor difficulties that might develop into major trouble later on. Get to know your fork truck inside and out. The more familiar you are with it, the easier it will be to take care of any troubles that arise. A system of check-charts and schedules will help you plan your work more efficiently and save hours.

Industrial Truck Safety Course

IMPROVEMENT in the safety and efficiency of industrial truck operation are the objectives of a course being conducted for the second year by the Philadelphia Safety Council of the Chamber of Commerce of Greater Philadelphia. Consisting of 6 two-hour sessions, the course is being held at the Naval Aviation Supply Depot and is under the direction of Walter W. Matthews, Managing Director of the Philadelphia Safety Council.

Officials of the council point out that this is the first course of its type ever offered by a safety council. With increased country-wide emphasis being placed on the importance of the safe operation of automobiles on roads and highways, the Philadelphia Safety Council felt that it was logical that proper attention be given to safety on industrial highways located in plants and warehouses where traffic consists of industrial lift trucks, tractors and other materials handling equipment.

Students for the course include persons responsible for the flow of materials through their plants and include safety engineers, materials handling engineers, supervisors and key operators. Instruction consists of classroom work, films, demonstrations and actual operation of the various pieces of equipment by students.

Cooperating with the Philadelphia Safety Council are the Philadelphia Naval Aviation Supply Depot which has made available classroom and operational areas and The Yale & Towne Manufacturing Company which has provided the industrial truck equipment used for instructional purposes.

Fatigue and Safety

WORKERS' FATIGUE, one of the most insidious and widespread causes of high production costs, results in a huge annual economic loss, according to Elmer F. Twyman, Vice President of The Yale & Towne Manufacturing Company. A substantial portion of the economic and social waste caused by industrial fatigue can be effectively diminished by the use of modern materials handling equipment.

Citing the findings of a fatigue study, Mr. Twyman pointed to the following:

"More deaths occur among industrial workers at corresponding ages than among clerical workers, the higher mortality rate being due to factors causing fatigue.

"The Caen Report of the Gulf Coast Regional Conference on Industrial Health asserts that losses due to fatigue are greater than compensated claims.

"Among the results of fatigue as described by the U. S. Bureau of Mines are: inaccurate movements; lessened ability to perform, thus decreasing productivity and efficiency; increased accidents and proneness to accidents; increased absenteeism; diminished quality of production; and lowering of mental aptitude.

"Studies in the textile industry indicate that the use of mechanical hoists to reduce the amount of heavy lifting and of electric lift trucks to move heavy cloth rolls resulted in over-all increases in efficiency and production and contributed a marked improvement in morale.

"A consensus of opinions of experts in the fields of industrial medicine, industrial engineering and safety engineering shows that loss in production is by no means the total loss resulting from fatigue."

Mr. Twyman said that "back-breaking" work in factories and service enterprises still using old manual handling methods results in physical and psychological wear and tear.

"While some of the problems of lessening industrial fatigue must be met by experts in industrial medicine and psychology," Mr. Twyman said, "a very substantial part of the problem will be solved by the materials handling equipment industry, as its labor-aiding, energy-conserving modern machinery wins greater and greater acceptance."

Industrial Hygiene

Air Pollution From Auto Exhaust Attacked On Two Fronts

Exhaust Control Research

PLANS HAVE been completed by the Air Pollution Foundation in Los Angeles for the stiffest road tests yet given the Houdry catalytic converter, one of the most promising devices aimed at controlling emission of hydrocarbons from auto exhausts in the battle against smog.

The Air Pollution Foundation has contracted with the Southwest Research Institute at San Antonio, Texas, to check the operation of two types of mufflers: one for use with nonleaded white gasoline and the other for use with gasoline containing tetraethyl lead.

Two mufflers for white gasoline will be tested on 1954 Chevrolets and four for leaded gasoline will be used on a 1954 Ford, a 1954 DeSoto, a 1953 Buick and a 1953 Cadillac—a total of six different mufflers for this initial proving-ground program.

Each of the six autos will be put through a 20,000 mile road test—considerably more miles than the average car owner drives in a year. At the end of each 1,000 miles, exhaust gases will be analyzed to determine if the catalytic units are continuing to function properly. The engine also will be examined to determine the effect of the unit on operating characteristics of the car and maintenance.

One of the automobile mufflers was tested last year, and it was estimated that the muffler was at least 80 percent efficient in eliminating hydrocarbons from the exhaust.

Engine Research

A TWO-WAY attack on the problem of reducing the amount of unburned fuel in auto exhaust gas was reported, at a Society of Automotive Engineers air pollution symposium, in two technical papers from General Motors Research Laboratories Division, listing results of both laboratory and road tests.

In the first report F. G. Rounds, P. A. Bennett and G. J. Nebel detailed their studies of vehicle exhausts under four typical driving conditions—idle, acceleration, cruising and deceleration. Their work involved exhaust gas samples from 180 automobiles. Road tests duplicated typical city traffic driving conditions.

Another report on the problem was made by J. T. Wentworth and W. A. Daniel. They used single-cylinder test engines in the laboratories with quartz "windows" in the cylinder heads for observing the entire combustion process. With highspeed motion pictures they made basic studies of combustion flames to determine the cause of unburned hydrocarbons in exhaust gases. Their photos showed that engine combustion is incomplete with an engine decelerating or idling.

Furthermore, they described two test devices that have shown promising results in reducing objectionable compounds in exhaust gas.

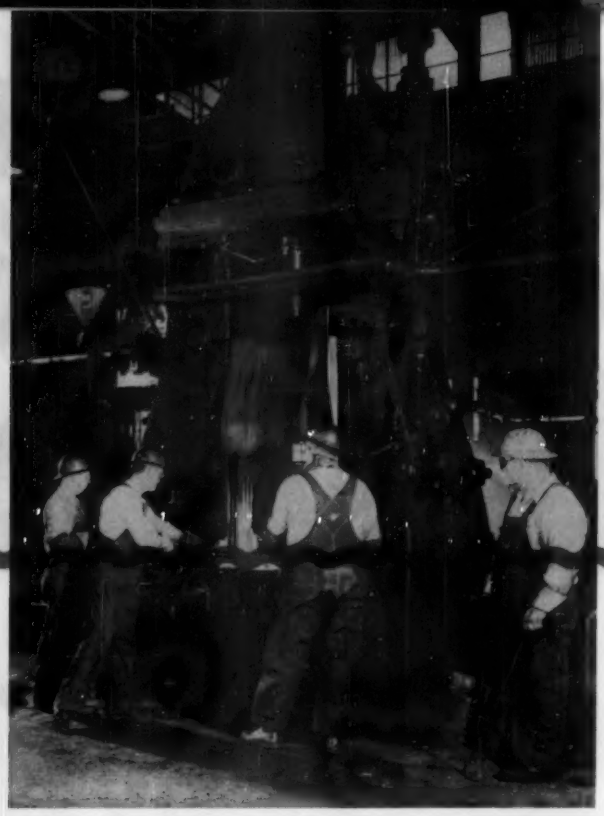
The Rounds-Bennett-Nebel report revealed:

1. At brief periods when motorists decelerate from

(Continued on page 40)

We thi
a work
OF

By W. F. SHOLTZ
Supervisor Industrial Hygiene
Allis-Chalmers Mfg. Company
West Allis, Wisconsin



INTEREST IN INDUSTRIAL hearing is constantly increasing because exposure to sound under certain conditions has impaired hearing. This interest is reflected in both management and labor circles.

Spurred by public interest, coming from what seems to be premature publicity, industry has been forced to take a stand on the problem. This, despite the fact that studies to date have merely outlined important uncertainties which make immediate establishment of standardized tests and measurements difficult.

Fortunately, a great deal of valuable preliminary study enabled our plant to set tentative standards which ultimately have helped us chart a course for our program. This will, we hope, bring us toward control of the problem to the satisfaction of everyone.

As a result of the experience gained in these basic studies, we have been able to develop a program which is rapidly taking shape. For anyone interested in starting a similar program, the following suggestions are worth considering.

Spot Checks

First, make a spot check of the plant with a sound level meter to see how much noise there is and where to locate it. If you find places where the noise level is more or less continuously high, a program of audiometric examinations is in order. These noise level spot checks should be followed by a complete sound level survey. After you have surveyed the plant, make a sound band analysis and possibly tape recording at locations where sound level readings are above 85 decibels. This data will be particularly helpful in planning a noise abatement program. Thereafter, make periodic follow-up surveys. Also, be sure to check all new, repaired, or transferred equipment.

A level of 85 decibels has been accepted only as a starting point for sound band analysis, and does not establish a level at which hearing loss begins.

Audiometric Examination

Give all new employees a pre-employment audiometric examination. For statistical purposes, it is desirable to take an audiogram on a pure tone audiometer in the frequency range of 125 to 12 thousand cycles. Ordinarily, the range of 250 to 8 thousand is used. It is also important to record the age, sex, and occupation of the employee. The previous work history should reveal the operations he has been exposed to in the past.

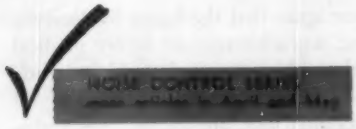
For example: "Did he work as a milling machine operator, a ribbon salesman, or as a boiler maker's helper? What was his opinion of the noise level where he worked? Did he think it was noisy? Could he carry on a conversation without difficulty?"

Record also his military service record, specifically stating what branch of the service he was in, what he did, and for how long. Such questions could include: Was he a machine gunner, an MP, an office worker, radar operator, etc?"

The next questions to ask are: "Is your hearing good?" This can be answered either yes or no. "Can you hear

...nk we have ...able method...

HEARING CONTROL



When someone claims a hearing loss . . .

. . . it is important to make a detailed investigation. In our plant this investigation covers the following. Maybe you can adapt it for your plant.

1. **General Information**
   - a. *date of investigation—by whom requested?*
   - b. *discussion of complaint, and date of noticeable onset.*
   - c. *name, age, social security number, clock number, shop and department number, shift, foreman*
   - d. *specific job—by name*
2. **Previous Work History—Outside**
   - a. *past work history—employer, job assignment and date, brief description of each job, type of equipment or machine used, and length of time on each*
   - b. *type of other activity around job*
   - c. *others*
3. **Present Work History**
   - a. *complete description of all jobs at A-C, type of equipment or machine used, length of time on each job*
   - b. *was ear protection used—type*
   - c. *type of other activity around jobs*
   - d. *sound level readings, including sound band analysis*
   - e. *others*
4. **Medical History**
   - a. *past—childhood diseases, head injuries, ear trouble, sports, military service*
   - b. *medical history, if any from previous job*
   - c. *present medical history*
   - d. *present and pre-employment audiograms*
   - e. *percent of hearing loss by interpretation, hospital record, examination (by company doctor or other)*
5. **Discussion**
   corrective action or recommendations discussed with supervisors or other pertinent parties
6. **Conclusion**
   summarize high points, recommendations and corrective action adopted

over the telephone, in a theater, in a single conversation or group conversation?"

It is also desirable to know if he is using a hearing aid, and if so, for how long he has worn it. Another important question is: "Do you, or have you ever, used ear protection?" It can be followed with such questions as: regularly-often-seldom. Also find out what type was used. It is interesting to note that some of the answers we received included: oil soaked cotton or dry cotton, 32 caliber shells, round head screws, gum, and even rubber pencil erasers. It may seem to some readers that the value of this data is questionable, but at least for

Over 47
SQUARE INCHES
Seam-Free
Work Surface
on New PIONEER
Stanflex
Plastic-Coated Work Gloves
Custom-fit, single seam lining (pat. pend.) — no seams on face of fingers, thumb, palm to chafe hands, wear out first. Elastic-knit jersey shapes to hand.
Wing-style thumb, curved fingers fit naturally, complete action freedom.
Tough bonded-vinyl coating won't peel or crack, always flexible, has amazing resistance to cuts, snags, abrasion — outwears leather. Satin-finish gives positive over-all grip. Watertight, resists oils, acids, caustics, most chemicals.
PIONEER Stanflex plastic-coated work gloves available in knit wrist, gauntlet, band top styles. Write today for complete information.
PIONEER
Stanflex
The PIONEER Rubber Company
244 Tiffin Road • Willard, Ohio
Quality Gloves for 35 Years

(For details, use Key # C-14 on card on page 75)

MARTINDALE

PROTECTIVE MASKS

PLACE HEADBAND WELL UP AROUND HEAD TO KEEP FROM SLIPPING DOWN
PRESS NOSE TABS IN CLOSE AGAINST FACE TO HOLD PAD AGAINST THE NOSTRILS
PRESS EDGES OF FACE PLATE DOWN TO FIT FACE SNUGLY

Weigh less than ½ ounce. Afford excellent protection against non-toxic dusts, except free silica. Replaceable cotton pads are inexpensive and sanitary.

Martindale Protective Masks ..... $.30 ea.
No. 1 Refills (Standard Weight) ..... .02 ea.
No. 2 Refills (Heavyweight) ..... .02½ ea.

Masks packed individually. Refills packed 25 to envelope. No. 2 (heavyweight) Refills contain twice as much filtering cotton as No. 1.

We pay delivery on Cash Orders.

DISCOUNTS

Less than $10.00 list	Net
$10.00 to $24.99 list	10%
$25.00 to $99.99 list	15%
$100.00 and over	20%
Minimum, charge or C.O.D.	$2.00
Minimum, cash with order	$1.00

PLASTIC EYESHIELDS

One piece plastic molding—with high impact strength—meet government specs.

PRICES—NET, FOB CLEVELAND

2 to 5 .....$1.55 ea.
6 to 11..... 1.45 ea.
12 or more .... 1.35 ea.
Minimum order 2

Send for new 64-page Catalog 29 of Maintenance, Production and Safety Equipment.

MARTINDALE ELECTRIC CO.
1397 HIRD AVE. CLEVELAND 7, OHIO

(For details, use Key # C-15 on card on page 75)

the present we feel it is important for research purposes. The employee should also be given an otoscopic examination to exclude present ear discharge or wax. This should be done by the examining doctor.

25 Percent Hearing Loss

In checking over 3 thousand pre-employment audiograms, we found that 25 percent of new employees had some type of audiometric loss. We recognize, however, that this represents only hearing losses found in an industrial segment in the Milwaukee area. It will probably be different for the general population and may vary considerably with geographical locations.

New employees going into areas where sound level readings are above 85 decibels should be rechecked before their probationary period has ended (in many plants this is three months) and then again 6 months after this examination. After that, examine them again every year.

I want to emphasize again that the figure 85 decibels, as I mentioned before, was arbitrarily set by our medical department as a level at which it was desirable to study possible audiometric changes among employees. If periodic physical examinations are given, the audiometric examinations should be part of it. However, eventually all employees should be covered by audiometric examinations.

If an employee shows a significant loss of hearing on the recheck, particularly a new employee, he may have a noise susceptible ear. If so, protect his ears with properly fitting and effective ear defenders. If these are not sufficient protection on a particular job, you may have to transfer the employee to a less noisy location. In this connection, a noise abatement program should also be considered to reduce the over-all noise level. The noise level at which an employee works should be entered on his audiometric record. Keep audiograms on file in the medical department as a part of his medical record. Sound level survey and noise abatement data should be centrally located and available to all interested parties.

The Examination Room

If you are going to conduct audiometric examinations on the premises, record them in a room, preferably part of the first aid facilities, where a noise level of less than 50 decibels is present. It is also important that the noise level be fairly constant. If the noise level in the room where the audiometric testing is conducted is high, acoustical engineers should be brought in to correct it.

We have found it practical to train our own audiometer technicians. Our medical department conducts this training, briefly as follows. A simplified description of what noise is and how it can be measured and evaluated is given each trainee. The use of the audiometer and its ramifications are demonstrated. Then we give the trainee an opportunity to practice approximately two or three hours, taking audiograms of various people

in the medical department. Then his instructor rechecks him to see that the audiograms have been made according to instruction. If the trainee has made satisfactory progress, he is permitted to make audiometric examinations under close supervision of the instructor. In addition, written instructions, detailing each step, are given each trainee, to be sure all operators take audiograms in the same way.

I have merely attempted to highlight the noise problem and examine what we think is a workable method of control. Admittedly, there is no ready or easy answer. We are, however, confident that further progress in noise control is a certainty, and final control is likely in the future.

From an address delivered at the 41st National Safety Congress. Picture by courtesy of Allis-Chalmers Mfg. Co.

Who Says Safety Shoes are Protective?

(Continued from page 15)

top of the ball to indicate sufficient width. If these rules are followed, the shoe will not harm the foot.

Overall Problem—Shoes and Feet

The problem of shoes and feet and their work together is a problem of all industry. By applying the principles of constructive medicine to the sale of safety shoes we believe you will see a new orientation or approach to this problem.

In thinking about it, one might say that the safety shoe is a "preventive" device. It is to prevent something bad from happening. By applying the principles of constructive medicine, we feel that the safety shoe is an item of "constructive" effort. ***It is there to cause something good to happen, not necessarily to prevent something bad from happening.***

On the basis of the usual, and rather negative approach to safety shoe sales, the only man who derives any benefit from his safety shoe is the one who drops something on his toe. This negative concept stems from the simple fact that safety men have always looked at the safety shoe as a preventive device. We believe that benefits from a properly fitted, heavy duty shoe, as an aid to foot health, are constructive and positive.

Certainly shoes are not the entire answer to foot problems. But our clinical experience proves beyond doubt, that regardless of the specific foot ailment involved, the first step toward healthy, productive feet must be taken in a shoe properly designed for the job and correctly fitted to the foot.

Safety men should rearrange their thinking on the application of safety shoes. ***Stop selling safety shoes for the harm they can prevent.*** Start being positive, start applying the principles of constructive action to your safety shoe program and sell shoes for the good they can do.

From an address presented at the 41st National Safety Congress. Pictures by courtesy of Peda Spray Co., Inc., and Westinghouse Electric

GETS-A-LITE GUARD and GUIDE
Quickly and Easily Installed by Anyone — No Tools Needed!

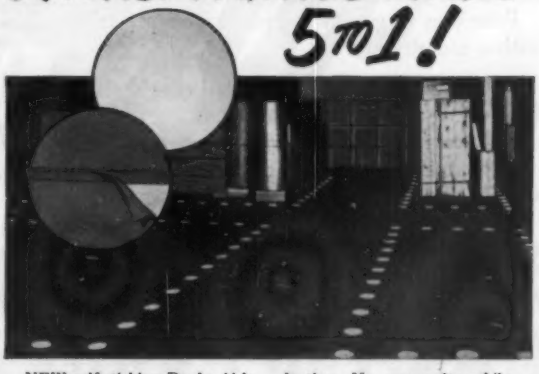
- Simply slip GETS-A-LITE GUARD AND GUIDE over the fixture, as illustrated.
- Made of indestructible spring steel wire. Nothing to break, get out of order or replace. Will last indefinitely.
- Once installed, GETS-A-LITE GUARD AND GUIDE is NEVER removed.
- Nothing to unlock, fuss with or lock, when changing lamps.
- GETS-A-LITE GUARD AND GUIDE actually steers lamp into socket, enabling maintenance man to change lamp in 10 seconds!
- Available for 40 watt and 100 watt fluorescent lamps.

GETS-A-LITE Company—Dept. SM-35
3865 N. Milwaukee Ave., Chicago 41, Illinois

(For details, use Key # C-16 on card on page 75)

BRADY DOTTED LINE AISLE MARKERS

OUTLAST PAINTED LINES 5 TO 1!



NEW self-sticking Brady Aisle Markers cost less to buy, apply and maintain than any other aisle marking method. Stick instantly to clean, dry floors. No moistening or machines needed. Make straight or curved lines anytime without disrupting production. No one waits while paint dries. New, special plastic construction resists abrasion, dirt, acids, oils, most solvents. Stocked in four vivid colors and sizes; specials to order. Write today for literature and usable FREE SAMPLES!

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W. H. BRADY COMPANY

724 West Glendale Avenue, Milwaukee 12, Wis.

(For details, use Key # C-17 on card on page 75)

The Industrial Nurse

Physician-Nurse Relationship

THE Medical Advisory Council of the American Association of Industrial Nurses met in New York in conjunction with the Executive Committee of the American Association of Industrial Nurses. One of the important decisions arrived at was adoption of a statement of "Principles to Govern the Relationship between Physician and Nurse Working within Industry." The resolution was:

The Physician-Nurse relationships in industry is based upon certain reciprocal attitudes, obligations and responsibilities. Working together as an effective team, the physician and nurse gain their objective which is to promote the health and welfare of the employee.

In the practice of medicine and nursing the nurse looks to the physician for support, authority, help and guidance. And the physician looks to the nurse for applied skills, good judgment, integrity and a willingness in the performance of nursing duties.

Principles to govern the physician-nurse relationship within industry are:

1. Conformance to the accepted ethical standards of the nursing and medical professions.
2. Recognition of a mutual objective.
3. Mutual respect, confidence and loyalty between the physician and nurse.
4. Recognition of the physician's authority in all matters pertaining to the care of the patient.
5. The nurse establishes standards of nursing procedures and is directly responsible for the quality of these services.
6. Recognition of the dignity of the industrial nurse and an appreciation for the nurse's contribution to the health program.
7. Channels of authority for the responsibility of administration of the health program must be established.
8. The physician will represent the nurse before management in all professional and administrative matters when expedient.
9. All professional personnel are encouraged to continue their professional advancement and to participate in the activities of their professional associations.

Decontaminating Radioactive Water

THE POSSIBILITY of radioactive contamination of public water supplies from the use of nuclear weapons or from improper disposal of waste from atomic reactor installations, research organizations or hospitals has emphasized investigations of methods of dealing with such contamination.

Removal of radioactive contaminants from water by ion exchange slurry is among the latest of these methods tested by the Sanitary Engineering Branch of the Corps of Engineer's Research and Development Laboratories, Fort Belvoir, Virginia.

The method consists in removing the radioactive contaminants from the water by the addition of commercially available ion exchar.ge resins. Attracted to the resins, the radioactive ions settle out with them after the solution has been agitated.

In the laboratory jar tests conducted by ERDL, the ion exchange resins were added to tap water contaminated with radioactive materials to a level approximating that expected in a water supply after the detonation of a nuclear type bomb.

Tests indicated that under certain conditions the ion exchange batch slurry treatment decontaminates radioactively contaminated water to a level suitable for emergency drinking purposes within 30 minutes. Because equilibrium is reached rapidly in the batch treatment it is faster, although sometimes less efficient, than the column type operation in which ion exchange materials are also used.

Engine Research

(Continued from page 35)

high speeds, 60 percent or more of the supplied fuel may pass through the engine unburned.

2. While idling, some engines allow as much as 25 percent unburned fuel to reach the exhaust pipe without burning, although the over-all average is only about 4 percent.

3. Accelerating or cruising engines expel a minimum of unburned exhaust.

4. The present trend toward automatic transmissions and engines of advanced design is giving motorists a dividend in combustion improvements by reducing unburned hydrocarbons in exhaust gases.

The Wentworth-Daniel paper revealed two general methods for trying to achieve the desired reduction of unburned fuel in the exhaust:

1. Shutting off the fuel temporarily during deceleration, and

2. Enabling a more combustible mixture of air and fuel to reach the cylinders during deceleration.

Devises based on these two principles, they said, achieved sizeable reductions. Although still in the experimental stage, they represent possible solutions of the problem at its sources—in the engine.

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(For details, use Key # C-18 on card on page 75)

inside the trade

Formation of a new company, The Permagile Corporation of America, 300 Fourth Avenue, New York City, to manufacture and sell new type plastic resin compounds, has been announced by Dr. J. A. Neumann, president of the American Agile Corporation, Cleveland, who will likewise head the new firm. The new compounds will be marketed under the name of "Permagile" and will be sold primarily to the building industry and through contractors. They provide among other uses, an effective solution to moisture and seepage problems in buildings and other structures.

The Cambridge Wire Cloth Company, Cambridge, Maryland, has announced that the R. D. Travers Company of Hamilton, Ontario is now distributing Cambridge woven wire conveyor belts, industrial wire cloth, special metal fabrications and gripper woven wire slings throughout the Provinces of Ontario and Quebec. Headquarters for the Quebec operation will be 4917 Rosedale Avenue NDG Montreal 29, Quebec and H. A. Campbell will be in charge. Ontario operations will continue from the present address, 12 Freeman Place, Hamilton, Ontario.

Speedways Conveyors Company, Inc., Buffalo, N. Y. announced the appointment of the Hamerslag Equipment Company, 45 Elmira Street, San Francisco, as exclusive distributors for Speedways materials handling equipment in northern California. Along with Speedways, other Hamerslag lines include other material handling names such as: West Bend Equipment Company, the Ballymore Company, the Aerol Company, Magline, Inc., and Bassick Company.

Medical Supply Company, Rockford, Illinois, announces the appointment of Mr. Richard G. Babbitt to the position of General Sales Manager. Mr. Babbitt has been with the first-aid products company since 1946 in various sales capacities and assumed his new position on January 1, 1955.

Mr. Richard P. Whitney has been appointed Assistant General Sales Manager, and he has been associated with Medical Supply Company for the past five years, serving in various purchasing and sales capacities.

Three new sales representatives have been appointed by The Colson Corp., Elyria, Ohio, manufacturers of casters, material handling equipment for industry, and wheeled products for institutions, it was announced by Robert A. Pritzker, president. J. J. Wortham has been named Texas branch manager and is in charge of the company's new warehouse and sales office in Dallas and of new branch offices in Houston, Tyler, and Weslaco. R. C. Browne, formerly at the branch sales office in Cincinnati, has been transferred to the new Louisville, Ky., office, and Roy Watson has been appointed to the Toledo branch sales office.

Formation of Wynko Manufacturing Corp., a Tennessee corporation to design, manufacture and sell industrial work clothing of all-Dynel and Dynel-blended fabrics, has been announced by R. J. Kohn, president, at the new firm's national sales headquarters, 175 Main Street, White Plains, N. Y. The firm will utilize the manufacturing facilities of Southern Athletic Company, widely known as one of the nation's largest manufacturers of athletic clothes. For the present, the new company will concentrate on chemically resistant work garments made of a new spun-dyed All-Dynel fabric. In the near future, this line will be supplemented by garments of blend fabrics combining Dynel with cotton and other fibers.

Pittsburgh Plate Glass Co. has announced the appointment of William J. Miller as manager of its newly-created unit, Safety Glass Replacement Sales. With the new unit, the firm's Plate Glass Sales Department establishes a liaison between jobbing accounts, company merchandising branches, the general office and the company's windshield glass manufacturing plant now under construction at Greensburg, Pa. Mr. Miller has been associated with Pittsburgh Plate Glass for the past ten years and a member of Plate Glass Sales since 1952.

Solar Electric Corp. of Warren, Pa., announces the appointment of Mr. F. Leslie Watson as Vice President in Charge of Sales. He will make his headquarters at 501 Fifth Ave., New York 17, N. Y., and will be in charge of all sales activities of the company, which includes promotion, representative agencies, direct sales, industrial sales and advertising.

Script-Oil Laboratories, manufacturer of hand cleaners and until recently known as Lixoil Laboratories, has announced a change of address. The firm is now located at 143 Federal St., Boston 10, Mass.

ALL THE SAFETY OF A STAIR
For specifications and prices on the complete line of Ballymore Safety Step Ladders, send for free catalog. Ballymore Company, Wayne, 18, Pa.
Ballymore
BALLYMORE SAFETY STEP LADDERS
(For details, use Key # C-22 on card on page 75)

Dr. Joseph Silverman has been promoted to head of the Research Department, Laboratory Division for Walter Kidde Nuclear Laboratories, Inc., it was announced by Dr. Philip Miller, Laboratory Director. The Laboratories are engaged in research for the design of nuclear power plants and the application of nuclear technology to industrial problems.

Promotion of Robert C. Olney to eastern regional sales manager of commercial trades, reflective products division, has been announced by Minnesota Mining & Manufacturing Co. His headquarters will be in the division's new reflective products sales office and display room in the First National Bank Building in Chicago.

Mr. W. E. Tromanhauser, President of the Buffalo Fire Appliance Corporation, of Dayton, Ohio, has announced the appointment of George H. Boucher as Vice President. Mr. Boucher was associated with the Pyrene Mfg. Co. for many years and played an important part in developing and establishing its distributing organization. He will assist in developing, increasing and broadening the Buffalo Fire Appliance sales outlets.

William L. Krapf, Manager of Bulkley, Dunton Processes, Inc. of New York, N. Y. has announced the appointment of Jean Paul Rolland of Montreal and Charles E. Napier Company, Ltd., of Toronto, as the firm's representatives in Canada. The New York firm, manufacturers of separators for the clarification of waste and process waters for industrial and commercial uses, made the move as part of a planned program to give more intensive sales and service coverage to Canadian industry.

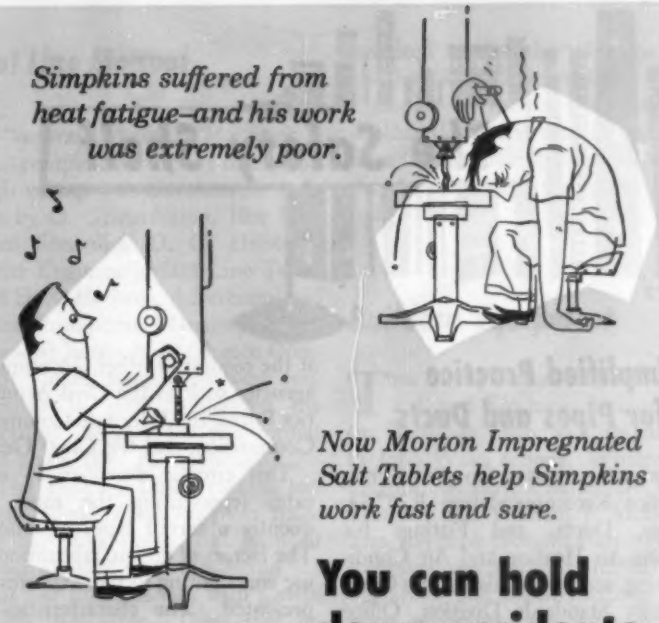
Robinson Aviation, Inc., vibration and shock control engineers, Teterboro, New Jersey, announces the appointment of a new manufacturer's representative to provide engineering service for Robinson's Airborne and Industrial Divisions. The J. M. Walthew Co., Boeing Field, Seattle 8, Wash. will represent the company in the States of Washington, Oregon, Idaho and Montana.

According to an announcement by M. Nielsen, vice president in charge of The Babcock & Wilcox Company's Boiler Division, a new department has been formed to consolidate the contract and erection phases of the division's operations. The new department, to be known as Contract and Erection, will be located in a new office building soon to be built near the company's plant in Barberton, Ohio. Laurence W. Hayward, former assistant chief engineer of the division, had been named manager of the new department. R. W. Fox, contract manager and J. P. Craven, erection superintendent will continue to be in charge of these respective functions, under Mr. Hayward.

The Cambridge Wire Cloth Co. announces the appointment of Richard Roche as Personnel Director. Mr. Roche has been associated with the Cambridge Wire Cloth Company for the past fourteen years, serving in a number of capacities. He was closely associated with the Woven Wire Conveyor Belt Dept. for nine years, acted as Safety Director, Supv. of Inventory and Receiving for the past five years, and also supervised the First Aid Department.

Mr. Francis D. Holden has been appointed Manager of Sales of Macwhyte Company. The announcement was made by Mr. R. P. Tyler, Vice President in Charge of Sales. Mr. Holden has been Assistant General Sales Manager since December 1, 1948.

Simpkins suffered from heat fatigue–and his work was extremely poor.



Now Morton Impregnated Salt Tablets help Simpkins work fast and sure.

You can hold down accidents caused by heat fatigue

Complies with Federal Specifications SS-S-31e for Type III, Class C Impregnated Salt Tablets

U. S. Patent No. 2,665,236
Patented 1954 (Canada) No. 501,316

Be sure you have plenty of Morton Yellow Impregnated Salt Tablets handy. Their controlled dissolving action gives *immediate* relief *without causing nausea.*

Essential body salt lost through perspiring is immediately replaced, but at a gradual rate. Your employees feel better, work better more safely, when they take Morton Yellow Impregnated Salt Tablets.

Morton Yellow Impregnated Salt Tablets come in a handy disposable dispenser. Plastic and heavy-duty aluminum dispensers are also available, as are plain salt tablets.

Place your order this week with your local safety equipment distributor. If he cannot supply you, write.

MORTON SALT COMPANY
Dept. SM-3, 120 S. LaSalle St., Chicago 3, Ill.

(For details, use Key # C-20 on card on page 75)

Simplified Practice for Pipes and Ducts

PRINTED COPIES of Simplified Practice Recommendation R207-54, Pipes, Ducts, and Fittings for Warm-Air Heating and Air Conditioning, are now available, the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, reports.

The recommendation consists of a simplified list of pipes, ducts, and fittings for warm-air heating and air conditioning for gravity, forced air extended plenum, and perimeter systems as well as sketches which are intended as an aid to identification of the items listed.

Printed copies of Simplified Practice Recommendation R207-54 may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., or from any Department field office, for 10 cents a copy. A discount of 25 percent will be allowed on orders of 100 or more copies.

Metal Failures

"MECHANICAL *Failures of Metals in Service*," by John A. Bennett and G. Willard Quick, has been published by the National Bureau of Standards. Designated as Circular 550, it is available for 30 cents from the Government Printing Office, Washington 25, D. C.

For many years the National Bureau of Standards has been requested to examine metal parts that have failed in service for evidence bearing on the causes of these failures. The examinations have been undertaken at the request of other Government agencies such as the Civil Aeronautics Board, the Interstate Commerce Commission, and the Coast Guard.

This circular describes 35 such cases representing the most frequently observed types of failures. The factors of design, fabrication, or use contributing to these failures are presented. The characteristics by which the various types of fractures can be recognized are discussed, and recommended precautions that should be observed to reduce mechanical failures of metals in service are included. The volume is well illustrated with photographs of the failures discussed along with photomicrographs showing sources of failure.

Progress of Standards

HOW MANY employers measure hearing loss due to noise in industry? These and other questions of interest to safety engineers, industrialists and others concerned with human safety are answered in the published proceedings of the Fifth National Conference on Standards, held last fall.

The 100-page volume is entitled, "Standards for a Strong America." It contains 40 papers on a wide range of subjects, including safety, international standards and world trade, company standardization, purchasing, architecture, quality control, agriculture, color TV, forecasts by technical and business paper editors, and ASA Annual Meeting and Award Ceremony addresses. Now available from the American Standards Association, 70 East 45 Street, New York 17, at $3.00 per copy.

Materials for Product Development

HUNDREDS of problems facing product designers in their selection of materials are discussed in "Materials for Product Development—1954" which has been published by Clapp & Poliak, Inc., New York. The book, the second of a series, contains the proceedings of the Basic Materials Conference, held in Chicago last May.

Six basic problems were under consideration. These were "Materials of the Future"; "New Metal Forming Processes," such as precision castings, powder metallurgy, forging, extrusion and stamping; "Non-Metallic Materials," including plastics, carbon-graphite, ceramics and glass; "Joining," with emphasis on adhesives and adhesive bonding of metals and plastics; "Corrosion Protection," and "Materials Management," a description of how to set up and operate a materials department.

In addition to the text of the papers presented by 13 speakers, the book contains 27 illustrations, tables and diagrams. One of the highlights is the inclusion of 258 questions and answers presented at the meetings.

Clapp & Poliak, producers of the conference and the concurrent Basic Materials Exposition, send the book without charge to all who attended the conference. Others may purchase the volume, postpaid for $7.50, by writing the publishers at 341 Madison Ave., New York 17, N. Y. The book is cloth-bound and contains 160 pages.

Dosimetry Handbook

A NEW handbook, "Photographic Dosimetry of X- and Gamma Rays," by Margaret Ehrlich, (National Bureau of Standards Handbook 57) contains primary factual data and basic principles necessary for photographic dosimetry of X- and gamma rays. It was prepared in response to an urgent need for more complete information on this topic. The data presented in the handbook

are the results of an extensive program in this field conducted over a number of years by the Radiation Physics Laboratory of the National Bureau of Standards.

Most of the information presented is concerned with the use of commercial photographic film for X- and gamma-ray dosimetry. Emphasis is placed on those properties of photographic emulsions that are basic to radiation dosimetry. Likewise, attention is called to limitations inherent in the methods and materials and to precautions that should be observed. Because considerable flexibility in techniques and procedures of film dosimetry is possible without appreciable effect on the end result, no attempt is made to specify all of the details uniquely.

Copies can be obtained from the Government Printing Office, Washington 25, D. C. for 15 cents per copy. Foreign remittances must be in U. S. exchange and should include an additional one-third of the publication price to cover mailing costs.

Hot Line Manual

THE PUBLICATION of "Hot Sticks," complete descriptive manual on high voltage line maintenance written by O. G. Anderson, Hot Line Tool Specialist, D. C. Hubbard, Chief Engineer of Hot Line Tools, and H. A. Houston, Advertising and Sales Promotion Manager, is announced by the A. B. Chance Company. Many suggestions were contributed by men throughout the electrical industry for the format and contents of the manual.

The 162-page book contains sections on care of hot line tools, training hot stick crews, operation of principal hot line tools, and 21 basic hot line tool jobs with a step-by-step procedure. These jobs include insulator, cross arm and pole changes on straight line, dead end, running corner and suspension construction. Voltage ratings of the job procedures range from 5 kv up to 287 kv. All jobs are completely illustrated so that the job steps can also be followed pictorially.

Copies of the manual may be purchased for $2.50 each by ordering from the Advertising Department of the A. B. Chance Company, Centralia, Missouri.

Building Equipment

THE THIRD edition of "Mechanical and Electrical Equipment for Buildings" has been published by John Wiley & Sons. Written by Charles M. Gay, Charles De Van Fawcett, and William J. McGuinness, the book provides a basic guide to design, specifications, installation, operation, and maintenance of the more important types of machinery, acoustical materials, and supporting media.

The revised standards and procedures of the last ten years have involved extensive changes in both the mechanical and electrical discus-

Get a Safe, Sure Grip...
with HOOD ANTI-SLIP GLOVES

HOOD
Model R-45
Also available as R-46, fully coated with natural rubber.

Hood Rubber Company makes a complete line of rubber and plastic gloves for industrial uses. Write today for illustrated catalog featuring Hood Glove Guide — "How to choose the RIGHT glove for EACH job".

HOOD RUBBER CO., WATERTOWN, MASSACHUSETTS
A division of the B. F. Goodrich Company
(For details, use Key # C-21 on card on page 75)

sions. On the mechanical side, there is now an entirely new chapter on radiant heating, and up-to-date information on pumps, baseboard and forced warm air heating, zoning systems and controls for hot water heating, and the Metro system of steam heating. The modernized electrical material incorporates the latest details on elevators and escalators, a-c and d-c theory, and underfloor duct systems. To help further in solving layout problems and assign typical floor space and ceiling elevations, important dimensions and weights of equipment are now provided. These and other points combine to offer a fruitful working source for architects, building owners and managers, contractors, maintenance men, and all those concerned with keeping buildings on a par with modern requirements.

The third edition of "Mechanical and Electrical Equipment for Buildings" contains 564 pages and is priced at $8.50. It is available from John Wiley & Sons, Inc., 440 4th Ave., New York 16, N. Y.

OVER-LOOKING A HAZARD?

You are if you are undersignalled!

All hazardous places or operations can't be eliminated, but their existence can be identified and pinpointed with an audible or visible warning signal.

A small investment in a FEDERAL Beacon Ray light, siren, horn or bell can save a life, avoid a painful injury or prevent a mechanical failure. One such saving, translated into dollars and cents may be the difference between business success and failure.

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FEDERAL TYPE A SIREN

FEDERAL SIGN and SIGNAL Corporation

formerly: Federal Enterprises, Inc.

8731 S. State Street
Chicago 19, Illinois

(Use Key # C-19 on Inquiry Card on page 75)

Thermal Insulation

A PROPOSED "Simplified Practice Recommendation for Thermal Conductance Factors for Preformed Above-Deck Roof Insulation," has been submitted to manufacturers, distributors, users, and others concerned for comment or acceptance, the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, has reported. The recommendation was proposed by the Insulating Board Institute.

The proposed recommendation provides five standard thermal conductance factors for thermal insulation manufactured and supplied in rigid or semirigid slab or board form, fibrous or cellular structure of organic or inorganic composition. The thickness of a particular insulating material required for each standard factor is readily obtained by the application of a simple formula or from a diagram which shows the relationship between the thickness and thermal conductivity for each conductance factor.

Meeting Specifications

In the opinion of the proponents, the general adoption of this recommendation will make it easier for the owner, the architect, or the engineer to specify the insulation value he seeks; easier for the general contractor and roofing contractor to follow the specifications as written, and will result in economic standardization at the manufacturing level, resulting in less waste.

Mimeographed copies of the proposed recommendation may be obtained from the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

SEND THIS PERSONAL SAFETY MESSAGE

TO EVERY ONE OF YOUR EMPLOYEES!

Safety is made attractive...vivid...colorful...

each worker clearly sees how safety benefits him.

You get enthusiastic safety cooperation instead of

tolerance...from every employee...every month.

YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
PROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work. They are
1 Make sure all guards are in place and working and wear the personal protective equipment your job requires.
2 Learn the safe way to do a job and do it just that way.
3 Report, avoid or eliminate all unsafe conditions.
As we see it: Safety is part of every job and like any craft it requires skill.
John Doe

Size 5½" wide x 8½" deep

...talks the worker's language!

Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

It gives you the advantages of personal contact, saving time and money. When it prevents one Lost Time accident, it has more than paid its cost for the year. Try it . . . it works!

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Every employee feels bucked-up by a note from the boss. If you desire, your facsimile signature can be printed here.

Your Signature Here

NOTE:
Your Safety News is designed to promote better employer-employee relations. Every item is carefully weighed from this viewpoint.

INSIDE PAGES

(pages 2 and 3)

So Goes the World
Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
from the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES
WORK OVERTIME
Dress for Safety
SAFETY SHOES
FALLS
FALLS KILL 60 EVERY DAY

IN YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

CHOCK-FULL OF ILLUSTRATIONS

Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

THE "FOLKSY" APPROACH

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(For details, use Key # C-23 on card on page 75)

The New Standards

There are now 1440 American Standards in use in the United States according to the annual report of the American Standards Association.

The number of American Standards approved in 1954, was 152, according to Vice Admiral George F. Hussey, Jr., USN (ret), managing director. Of these, 64 were new standards, 88 were revisions. The greatest number of new standards was in the electrical field.

Admiral Hussey reported that there are 200 national committees composed of experts in engineering, safety, consumer, manufacturing and various other fields, now working on standards projects. The personnel on these committees are appointed by various technical societies, trade associations and other interested organized groups. American Standards are products of all these groups.

In addition, some standards, long in use by established technical societies, trade associations, and sometimes, companies, are also submitted to the American Standards Association for approval as American Standards.

One of the most outstanding standards approved for the year was for transformers which was estimated by the committee chairman to save $100,000,000 in the next three years.

Accident Rates

A document which may affect every American business or industry is the American Standard method of recording and measuring injuries received at work. The Bureau of Labor Statistics has put the standard into effect for compiling accident statistics. The National Safety Council, co-sponsors of the standard with the Accident Prevention Department of the Association of Casualty and Surety Companies put the new standard into effect January 1, 1955, and urged all industrial concerns to do the same. Requests for 20,000 copies of the standard have already been received from industry.

Last year was the first time there have been standards approved for office equipment, Admiral Hussey reported. Seven standards in this field for 1954, he pointed out, indicates a new trend.

"There are multitudes of savings in money, time, efficiency and comfort never touched upon, which office managers, purchasing men and other executives have wanted something done about for a long time," he said, "and standards will be able to accomplish many of these savings."

"Electrical engineers will find it easier to speak the same language. The American Standard Graphical Symbols for Electrical Diagrams has just been revised, employing symbols familiar to the majority of engineers. Coordination of these symbols with international standards was carried out through the International Electrotechnical Commission."

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(Use Key # C-24 on Inquiry Card on page 75)

"What's the Law?"

Edited by
HENRY M. GROSMAN
Counsellor at Law, Newark, N. J.

Master Superior Court, New Jersey
Member
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
Newark, N. J.

• • •

Not An Employee

THE PETITIONER WAS a trustee of a church. The trustees decided to build an addition to the church which would be paid for by subscriptions. They also provided that anyone who subscribed could work on building the addition and receive a credit of 1 dollar and a half per hour against his subscription. The petitioner subscribed and was injured performing carpentry work on the addition.

The petitioner claimed the relationship of employer-employee existed and that he was entitled to recover compensation under the Workmen's Compensation Act.

The name of the petitioner was not carried on the records of the church as an employee, and there was no evidence that his name was given to the insurance carrier as an employee.

In affirming the determination of the Workmen's Compensation Bureau that no employer-employee relationship existed, the County Courts pointed out that: the church paid no income, social security or unemployment tax in connection with the petitioner.

The work which the petitioner performed was voluntary and he did not perform services for the Church for financial consideration as contemplated by the Workmen's Compensation statute.

The petitioner claimed that the Workmen's Compensation policy covered him since it was the intent of the trustees to have the policy cover subscribers who performed labor on the building. The Court, however, disposed of this contention on the ground that it is not the intention of the parties that brings about the employer-employee relationship under the Workmen's Compensation Act, but rather the relationship created within the meaning of the Workmen's Compensation Act.

ARMITAGE VS. TRUSTEES OF MT. FERN M. E. CHURCH
Decided December 22, 1954, Morris County Court of New Jersey.

Personal Act

DECEDENT WAS A tax consultant, who was required to take extended trips, at which time he was accompanied by a supervisor.

On October 2, 1952, the decedent was required to take a business trip to Miami at which time the supervisor, who accompanied him, made all the arrangements. On October 5, 1952, Sunday, the work was completed. The supervisor, however, had made the plane reservations for October 6th, and so the supervisor and the decedent decided to take a boat trip. The boat capsized and the decedent drowned.

The Workmen's Compensation Board disallowed the widow's claim on the ground that the death arose out of a purely personal act, dissociated from his employment.

In reversing this determination, the New York Supreme Court stated the law to be: that when an employee is required to travel to a distant place on the business of his

employer, and is directed to remain at the place for a specified time, his status as an employee continues during the entire trip. Any injury occurring during this period is compensable, so long as the employee, at the time of the injury, was engaged in a reasonable activity.

SCHNEIDER VS. UNITED WHELAN DRUG STORES
New York Supreme Court, Appellate Division, Decided Dec. 16, 1954.

Caddy Hit By Golf Ball On Day Off

THE CUSTOM OF A country club was to permit its caddies to play golf on Mondays. On such a day the petitioner was struck in the eye by a ball being played by another caddy. The Industrial Accident Commission denied compensation.

The California District Court of Appeals in reversing the determination by the Industrial Accident Commission, based its decision on the grounds that the activity had achieved some status as a custom and that the situation was analogous to injuries suffered by employees, who during their lunch hour, customarily engaged in recreational activities.

WINTER VS. INDUSTRIAL ACCIDENT COMMISSION
California District Court of Appeals—Decided November 23, 1954.

N. Y.'s Safety Show

ELEVEN THOUSAND safety experts from all over the nation will gather in New York for five days of conferences, starting April 11, aimed at reducing this country's annual accident toll of 95,000 lives, nearly ten million disabling injuries and an economic loss of close to nine billion dollars.

New York's 25th annual Safety Convention and Exposition will be held in the Hotel Statler under the sponsorship of the Greater New York Safety Council and 71 cooperating agencies, among which are the Army, Navy, Atomic Energy Commission, Red Cross, the City administration, and business, civic, government and professional groups.

There will be 58 meetings, covering almost all fields of traffic, home, industrial, school and public safety. There will be more than 200 addresses by Federal officials, scientists, local law enforcement officials, safety engineers, educators and industrial executives. In observance of the Silver Anniversary safety convention, this City will officially observe "Greater Safety Week" in welcome to the accident prevention workers and to emphasize individual responsibility in avoiding accidents.

In conjunction with the convention the Safety Council will hold an exposition of the latest developments in safety devices, demonstrations of psychophysical tests for motorists and other aids to accident reduction. There will be 150 displays, topping the previous record of 118.

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The miniature nose mask that is as handy as a pair of glasses. So light, less than 1 ounce. So convenient it can be worn while smoking, eating, talking. Amazing 9 sq. in. filter. Vest pocket size. Can be carried, ready for use instantly. Write for details! Send $1.20 today for sample!
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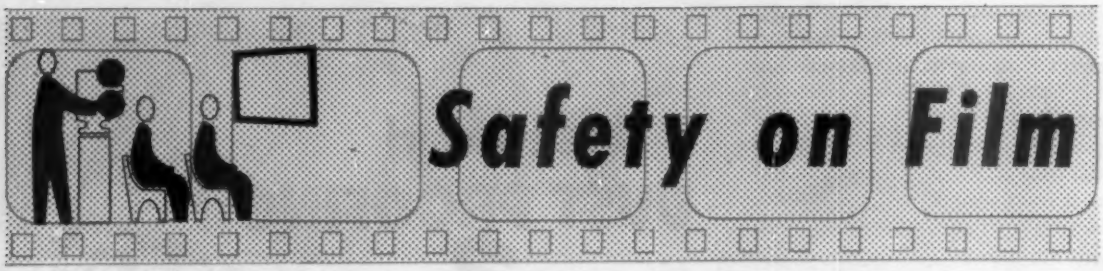

Highway Safety Film

A CHALLENGING and dramatic new film on highway safety, "The Perfect Crime," has just been released by Caterpillar Tractor Co., Peoria, Ill., through its local dealers. The 20-minute, sound-color film is presented with the cooperation of the National Safety Council's Construction Section and members of the Associated General Contractors of America. The film was produced by Calvin Company of Kansas City, Mo.

"The Perfect Crime" opens with a double murder in a $14 robbery. Public indignation is aroused and the murderer is rapidly apprehended. Then the narrator deftly draws the comparison with another crime—murder on the highways—and cites an apathetic public for its indifference to this tragedy.

Motorists are admonished in "The Perfect Crime," but not necessarily for their driving habits. The viewer is not told he is responsible for the maiming and murder, but there is no question that there is a responsibility and the viewer can accept or reject the blame. This responsibility is legislation which will give the motorist a safe highway system and the election of alert public officials.

Showings of "The Perfect Crime" which is cleared for television, may be arranged with the nearest Caterpillar dealer or by writing Sales Promotion Department, Caterpillar Tractor Co., Peoria 8, Ill.

Film Festival

ONE OF THE highlights of the forthcoming American Film Assembly, to be held April 4–8 at the Waldorf-Astoria in New York City, will be the showing of outstanding 16mm films. Called the "Golden Reel Film Festival," films will be shown in 25 subject categories. In the general category on "Safety" will be subdivisions on: driver education, fire safety, life saving, accident prevention, safety devices and measures, and safety education.

Another category of interest to the industrial field is "Industrial Processes," which will include: factory management, industrial efficiency, inventions, job analysis, machinery, manufacturing methods and procedures, and research. Among the other general subjects of these informational films are: health and hygiene, human relations, medical sciences, mental health, recreation, sales and promotion, and science.

Professional juries will determine the best film in each category. The general public is invited to all screenings. Persons interested in special categories may register for one day only and attend those films which interest them. Full details may be obtained from: American Film Assembly, Film Council of America, 600 Davis St., Evanston, Ill.

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CUT GLOVE COSTS
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THE SURETY RUBBER CO. Carrollton, Ohio
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EXTRA-HEAVY COATING FOR EXTRA LONG WEAR . . . and greater palm comfort.
NO SEAM HERE TO RIP OUT . . . Wing thumb (one-piece palm and thumb) construction for multiplied service life.
(For details, use Key # C-26 on card on page 75)

Film on Carelessness

A NEWLY produced safety film, "It Didn't Have to Happen," has been given the award of merit of the National Committee on Films for Safety as one of the "outstanding occupational safety films of the year." With dramatic impact it illustrates how the careless or the over-confident woodworking employee who scorns the use of guards and safety devices on today's machines endangers not only his own life, but those of fellow workers.

This realistic portrayal of the careless worker and the tragedy he brought into his factory could happen in any plant where machinery plays a part with the workers.

This prize-winning film was produced by Crawley Films for the Industrial Accident Prevention Associations of Ontario. Sales prints in 16mm size, with a running time of 13 minutes, are available to buyers (outside Canada) from International Film Bureau Inc., 57 East Jackson Blvd., Chicago 4, Illinois. (Sale price is $75.)

Pallet Standardization

WORK OF Committee B-69, the Pallet Standardization Committee of the American Standards Association, has been further advanced with the appointment of J. E. Wiltrakis, Western Electric Co., New York, as chairman of the Technical Committee. Wiltrakis is charged with establishment of five sub-committees, named to cover definitions, surveys, materials, testing and sizes.

Preliminary meetings of the Project Committee included the September 28th meeting of the Steering Committee, Congress Hotel, Chicago, and the Main Sectional Committee meeting, September 29, at the Morrison Hotel, Chicago.

The Project has administrative co-sponsorship by the Society of Industrial Packaging and Materials Handling Engineers and the American Society of Mechanical Engineers.

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BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
HELP KEEP THIS PLACE CLEAN
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EXIT
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WARNING CURRENT —ON—
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GRAND PRAIRIE, TEXAS
SATISFACTION GUARANTEED OR YOUR MONEY REFUNDED
(For details, use Key # C-27 on card on page 75)

Sanitation Clinics

THE COMPLETE schedule of dates for the series of clinics on organizing a sanitation program based on work standards, that are being held in various cities throughout the country, has been announced. (An article on the subject matter for these clinics was published in the December, 1954, issue of "Safety Maintenance," page 15.)

The one-day clinics have been running for about a month. The remainder of the schedule follows (Numbers indicate day of month):

MARCH—2, Minneapolis; 5, St. Louis; 7, Indianapolis; 9, Columbus; 11, Cincinnati; 28, Kansas City; 30, Omaha.

APRIL—1, Denver; 4, Salt Lake City; 11, Seattle; 13, Portland; 18, San Francisco; 20, Los Angeles; 22, Phoenix; 25, Oklahoma City; 27, Fort Worth; 29, Houston.

MAY—2, New Orleans; 5, Miami; 9, Jacksonville; 11, Atlanta.

Full details about the sanitation clinics may be obtained by writing to: Cost Control Clinics, P. O. Box 25, Crescent Hill Station, Louisville 6, Ky.

ALL TYPES...ANY CLASS FIRE!

Since different fire hazards require different types of fire extinguishers, PYRENE—C-O-TWO manufactures all types . . . the finest and most complete line on the market today.

When doing business with PYRENE—C-O-TWO, you receive unbiased advice on what is best for your particular fire hazards, whether class A, B or C. Also, there is a well-rounded sales engineering organization having nation-wide representation to render top quality service wherever you're located.

Don't take unnecessary chances . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts now!

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COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

(For details, use Key # C-28 on card on page 75)

The Fire Front

Heating Insulation

FIRE RECORDS indicate that about 10 percent of the total fire loss of the United States is caused by heating equipments, and that insufficient clearance to combustible materials is an important factor in a large percentage of these fires. The need for adequate clearances is emphasized at periods of severe cold weather by a marked increase in the number of such fires, according to a bulletin of the National Board of Fire Underwriters.

In making inspections of buildings one of the fundamentals which should be borne in mind is that every device which gives off heat may be a source of fire hazard if combustible materials are not kept a sufficient distance from the device or are not protected to eliminate the possibility of their becoming ignited. The amount of clearance, or the amount of clearance in combination with whatever protection is applied to the combustible material, must be such that the temperature to which the combustible material will be raised will not exceed the same temperature limit for that material. The amount of clearance, degree of protection, or combination of these which will be necessary will depend to a great extent upon the device. For example, consider the question of clearances for stoves of various kinds.

Types of Heaters

One type of heating stove, not so commonly used now as in years past, is arranged so that the fire is directly against the cast iron or sheet metal forming the outer surface of the stove. Because the outer surface of these stoves normally gets very hot, sometimes red hot, a clearance on all sides to combustible material (such as woodwork and including wood stud partitions) of not less than 36 inches should be provided. A more modern type of heating stove has an outer casing of sheet metal arranged for circulation of air between the part enclosing the fire and the outer casing. Circulating type space heaters radiate much less heat than stoves without the outer casing. For such heaters a minimum clearance of 12 inches on all sides to combustible material should be provided. In each of the above cases, the clearance may be reduced one-half if the combustible partition is protected by a shield of metal or other noncombustible material, so attached as to preserve an open air space behind it.

Masonry Poor Insulator

Devices which are run continuously at a high heat need special attention. In one case, piles of paper stock on a floor of tile and concrete 12 inches thick were ignited by the heat from high pressure boilers on

Annual Fire Losses

FIRE damaged or destroyed an estimated $870,984,000 worth of property in the United States last year (1954), according to the National Board of Fire Underwriters. This is 3.6 percent less than that for 1953, when estimated monthly losses totaled $903,400,000, which included one large industrial loss in August of 1953.

Estimated losses for December (1954) totaled $83,881,000, an increase of 36 percent over losses of $61,663,000 reported for November and an increase also of 0.5 percent over losses of $83,440,000 reported for December, 1953.

These estimated insured losses include an allowance for uninsured and unreported losses.

Month	1954	1953	1952
January	$86,493,000	$76,659,000	$74,155,000
February	78,928,000	72,706,000	69,925,000
March	84,821,000	83,471,000	72,254,000
April	77,933,000	67,362,000	67,380,000
May	62,282,000	64,239,000	62,354,000
June	65,533,000	67,644,000	58,585,000
July	69,532,000	74,938,000	61,675,000
August	78,163,000	107,713,000	56,462,000
September	64,087,000	68,613,000	58,949,000
October	57,668,000	68,551,000	63,958,000
November	61,663,000	68,064,000	65,129,000
December	83,881,000	83,440,000	74,127,000
TOTAL	$870,984,000	$903,400,000	$784,953,000

the floor below, even though the boilers were encased in brick and there was a clear space of 28 inches above them. This fire shows the poor insulating qualities of solid masonry and indicates the need of air circulation to prevent the building up of such high temperatures in walls, floors or ceilings.

Other devices such as incinerators which may only be operated intermittently may also need special attention because of their use for burning paper and other materials which produce a very hot fire, and because they are often overcharged and left without supervision while still in operation.

Boilers

All hot water and low pressure steam heating boilers should be covered with noncombustible insulation. With such insulating coverings, the principal danger to combustible material usually occurs in connection with the smoke pipe, which is also true with warm air furnaces. In one eastern city, where many smoke pipes were found too close to combustible ceilings, a campaign by fire department officials to get greater clearances, where necessary, has been successful in removing many fire hazards. Where other methods could not be used, it was found that for a small cost the chimney opening for the smoke pipe could be lowered the necessary amount.

Wood Temperature

Long continued heating at temperatures as low as 212 Fahrenheit may produce ignition of wood under favorable circumstances. To provide some factor of safety, temperatures on woodwork should be kept somewhat lower than 212 F. In testing fuel-burning heating devices, it is standard practice to use a rise of 90 F. above test room temperature or approximately 160 to 175 F. as the maximum permissible temperature on surrounding woodwork.

In making fire prevention inspections the checking of clearances by temperature measurements is not feasible; a simple rule which is sometimes useful is that woodwork is not safe if it is too hot for the bare hand, but in the majority of cases the practical thing to do is to see that clearances conform to the ordinances and other requirements which apply. Data on minimum clearances contained in local ordinances may be supplemented by the provisions of the Building Code Standards of the National Board of Fire Underwriters for the Installation of Heat Producing Appliances.

Top Clearance

Attention should be given to clearances above heating devices as well as at the front, sides and rear, and to clearances from smoke pipes, range hoods, warm air pipes and registers and steam and hot water pipes, not overlooking any device or apparatus which may give off heat in sufficient quantity to ignite combustible materials.

"Fire-Chief Finished"

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to confine the welding operation to a given area

used to protect machinery, and other equipment from water, dust and snow.

MADE OF CANVAS

impregnated with Hooper's Fire Chief treatment under their patent which carries the Underwriters' Laboratory seal.

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MANUFACTURERS OF REEVES STRETCHER

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"If It's Made of Canvas, We Make It"

(For details, use Key # C-29 on card on page 75)

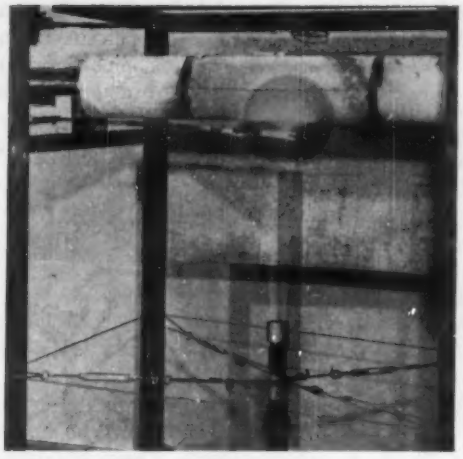
Sprinkler Group Elects

At the annual meeting of the National Automatic Sprinkler and Fire Control Association held in New York, John J. Power, Jr. of Youngstown, Ohio, was elected President and Chairman of the Executive Committee. Mr. Power is Executive Vice President of the Automatic Sprinkler Corporation of America.

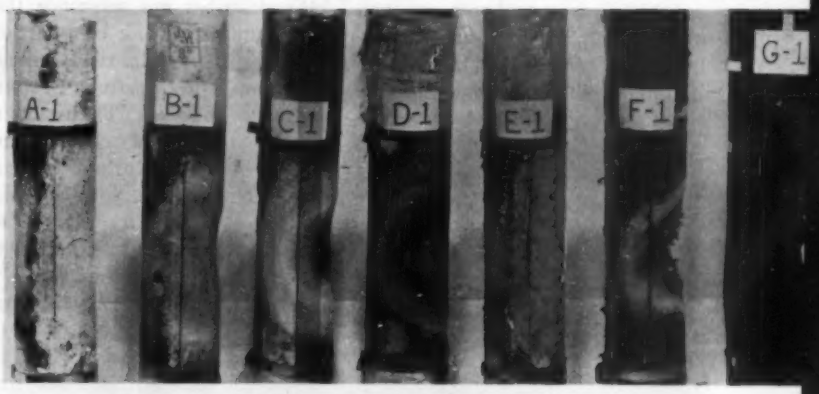
Frank J. Fee, Jr. of Mount Vernon, N. Y., was named First Vice-President and Vice-Chairman of the Executive Committee.

Other officers re-elected at the meeting were Ray B. Heath of Worcester, Mass., Second Vice-President and A. G. Woelfel of Ridgefield, New Jersey, Secretary-Treasurer.

TEST SHOWED MAGNESIA INSULATION WORKS



Magnesia insulation is almost completely enveloped by 2000 degree flame in fire test (left). After 30 minutes in flame test samples looked like this (below). Sample at left of picture, 85 percent magnesia, is undamaged.

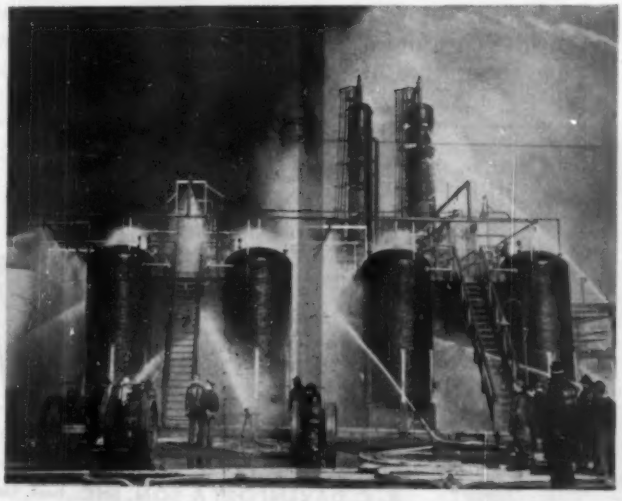


FIRE TESTS CARRIED out with 85 percent magnesia thermal insulation demonstrate that the material will withstand a 2000 F flame for an extended period without appreciable damage. The tests conducted by the Technical Committee of The Magnesia Insulation Manufacturers Association indicate that the insulation is capable of protecting pipes and equipment and their contents under average fire conditions.

The insulation, applied to a section of steel pipe by standard methods, showed no damage beyond slight surface cracks after 2 hours in the intensely hot flame. Temperature on the surface of the insulated test pipe was below 600 F. The results indicate that 85 percent magnesia would remain intact and would protect pipe lines, flues, ducts and other equipment from fire damage. During a plant fire it would also prevent sudden temperature rise of the contents of the pipes and vessels.

The tests showed further that 85 percent magnesia insulation resists fire damage equally well when covered with canvas, galvanized steel, aluminum, or various asphaltic jackets. However, the type of jacket did not have any marked effect on the amount of heat transmitted through the insulation to the pipe surface, although somewhat lower

. . . SO DID FIRE!



Fire tests were confirmed by spectacular blaze (above). Magnesia insulated equipment resisted fire excellently.

temperatures were recorded for the canvas-covered samples.

As a basis for comparison, 6 other commercial types of thermal insulation generally used for the same service were tested under identical conditions. In its summary of results, the Association's technical committee said that canvas-covered 85 percent magnesia showed superior resistance to the hot flame. While jacketing other than canvas improved the performance of the other types of insulation tested, 85 percent magnesia performed about equally well under all conditions.

Testing Set-Up and Procedure

The tests were carried out with empty 6-foot lengths of 3-inch standard steel pipe covered with one inch of insulation. Chromel-alumel thermocouples cemented at the top and bottom of the pipe under the insulation showed the amount of temperature increase at the pipe surface. The pipe was supported horizontally in a test stand about 10 inches above the orifice of a burner firing a mixture of compressed air and manufactured gas.

Temperature readings from top and bottom pipe surfaces during all tests were recorded at intervals until the bottom surface reached 1000 F, taken as the point of insulation failure. If this temperature was not attained, the test was concluded after 2 hours.

The Association reported that at the end of the two-hour period the pipe insulated with canvas-jacketed 1-inch thick 85 percent magnesia showed a bottom pipe surface temperature of 593 F and a top surface temperature of 501 F. This was the lowest pair of temperature readings noted.

Pictures by courtesy of Magnesia Insulation Manufacturers Association.

Floor Fire Tests

A NEW publication, "Fire Endurance of Open-Web Steel-Joist Floors With Concrete Slabs and Gypsum Ceilings," by James V. Ryan and Edward W. Bender (National Bureau of Standards Building Materials and Structures Report 141) describes fire resistance tests on a number of floor constructions which are typical of those suitable for use in homes, apartments, stores, and office buildings. The results reported will be useful to building and code officials as well as architects and engineers concerned with the selection of ceiling constructions for application below steel joist floors for the purpose of providing varying degrees of fire resistance to the structure.

The results obtained in a program of 18 fire tests on open-web steel-joist floors are presented; 16 of these were protected by ceilings of gypsum-perlite plaster on gypsum lath "furred" directly to the joists. Variables included plaster thickness, plaster mixes, spacing of furring channels, system of lath clips, reinforcing in the ceilings, and type of floor slab. An acoustical plaster finish was applied to one ceiling. The range of fire endurances obtained, from 1 hour to 4 hours 26 minutes, was sufficient to cover the requirements for floors in many building codes. The importance of the ceiling's protective function was demonstrated in two tests without ceilings, in each of which failure occurred at 7 minutes.

Copies can be obtained from the Government Printing Office, Washington 25, D. C. The price is 20 cents per copy. Foreign remittances must be in U. S. exchange and should include an additional one-third of the publication price to cover mailing costs.

Tank Truck Cleaning

PUBLICATION of a new edition of a safety manual on how to clean tank vehicles used for the transportation of flammable liquids has been announced by the American Petroleum Institute. The new edition is illustrated, and replaces a tentative manual issued five years ago. It is known as API Accident-Prevention Manual No. 13A. Copies may be obtained through the Institute (50 W. 50th St., New York 20, N. Y.) for $1.00 each. Discounts are allowed on quantities.

The purpose of the manual is to provide information on how to clean, prior to repair, any tank vehicle equipment which is used in the transportation of flammable liquids. Attention is called to the measures which should be taken to protect personnel against harmful vapor concentration and to avoid the ignition of flammable vapors which may be present during certain phases of mobile tank-cleaning operations.

Among the subjects covered are preparation of tank units for repair, repair operations, preparation of tank compartments for gas-freeing, methods for gas-freeing tanks, and precautionary measures for hot work.

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DAV-SON FLASHING SAFETY DIRECTOR
With Amazing Changeable Letter Slide Out Panel

Bright traffic light red, green spots flash "SAFETY FIRST." Color, motion, light bring eyes directly to message. Only DAV-SON has changeable letter design with removable panel for quick changes, peak attention. 98 red 3½" and 250 black 1⅞" acetate letters in compartment box incl. Size 18½x29x6. Complete with lamp and U.L. Cord. $39.75

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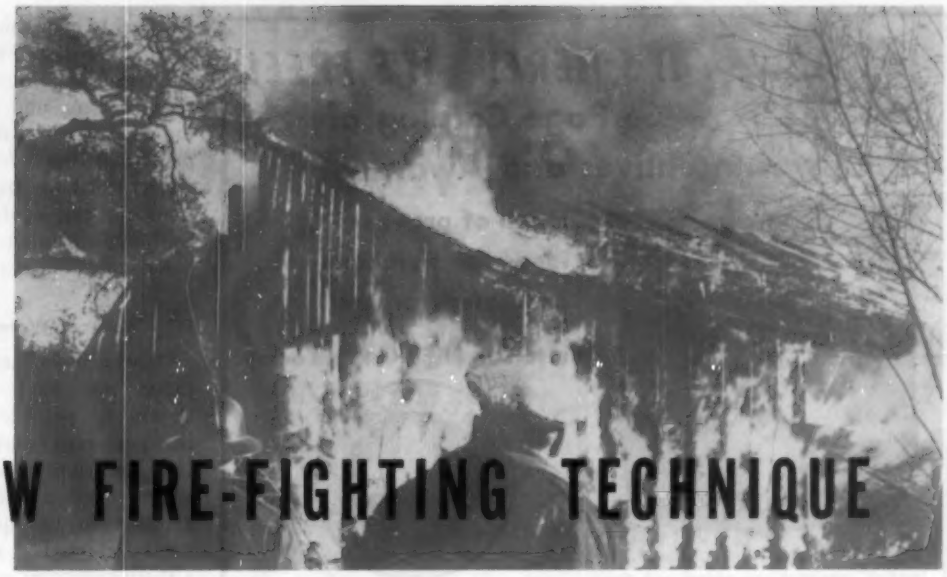
(For details, use Key # C-38 on card on page 75)



NEW FIRE-FIGHTING TECHNIQUE

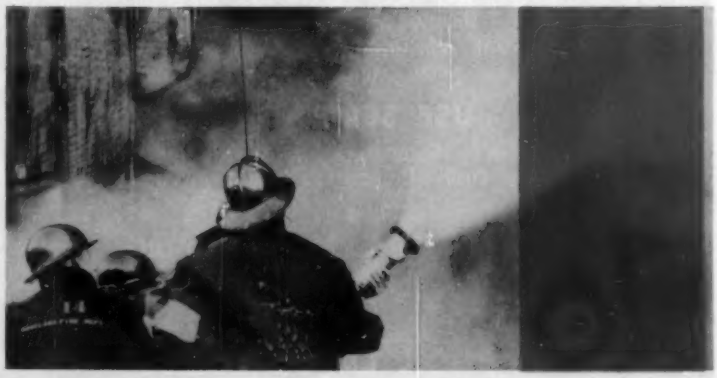
Even though fire has a good start . . .

A NEW TECHNIQUE IN fire-fighting was recently demonstrated successfully, providing initial proof that ember fires in industrial plants, barns, and small homes may be successfully extinguished with only a small amount of water. Fire officials say it will have important civilian defense implications for fighting industrial and home fires where the water supply has been cut off or is short.

The technique that was shown involved an initial attack on a large 60 by 60 foot burning barn with dry chemical fire extinguishers. The chemical—which is specially-treated baking soda—knocked down the flames within 30 seconds, after which water was quickly applied to douse the embers and prevent re-ignition. The test was later repeated against a fire in a small two-room house, and was equally successful.

Chief George Magee, of the Santa Rosa, California Fire Department, who conducted the tests with the aid of engineers from an extinguisher manufacturer, estimates that less than 200 gallons of water was required to complete the extinguishment. This, he says, is perhaps only 1-tenth of what might have been

Dry Chemical knocks it out . . .



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is full of proven ideas for merchandise and safety promotion

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GC-11

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(For details, use Key # C-30 on card on page 75)

SCRIPT-OIL

HAND CLEANER

(formerly known as LIXOIL)

Based on a new principle in skin cleansing

Regular Use of SCRIPT-OIL Helps Prevent Many Industrial Skin Diseases.

It should be used in your factory if you have oil eruptions and oil folliculitis among machinists.

Why continue to risk skin eruptions by using solvents to remove paint, tar, pitch, grime, etc., from the skin.

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required to extinguish the fire had it been attacked with water alone.

Of the 300 industrial, municipal, state, county, and civilian defense fire officials who witnessed the test, many said they were convinced the results will have important implications for the fire-fighting services. Said one superintendent of fire and plant protection at a chemical plant:

Reduces Water Damage

"The demonstration of the technique was most impressive. It should be possible to put a dry chemical tank unit aboard a fire truck and go in to do a job in places where there's a water shortage. In addition to the quick extinguishments achieved, it also could mean a sharp reduction in the amount of water damage, which is an important factor in fighting fires in warehouses and similar buildings."

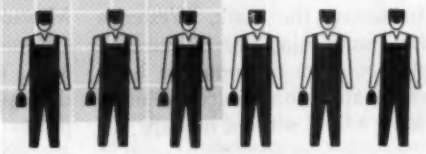
The extinguisher manufacturer's representative, who knocked down the fires with the dry chemical, estimated that only 110 pounds of the chemical was used out of a 350-pound capacity. He fought the fire alone, although an assistant carrying a 30-pound portable unit was present in support. He used a nozzle that was adjusted to expel the chemical in a straight, rather than a fan-shaped, stream. The water to douse the embers was sprayed on by Santa Rosa firemen through two 2 and one-half inch fog nozzles.

Pictures by courtesy of Ansul Chemical Co.

Instrument Conference

Los Angeles has been selected as the host city for the 10th Annual Conference and Exhibit of the Instrument Society of America, President William A. Wildhack announced. Dates will be September 12–16, 1955 at the Shrine Exposition Hall and Shrine Auditorium. The theme will be "Instrumentation Paces Automation." Dr. Arnold O. Beckman has been appointed general chairman of the host committee, with Fred Tabery, 3443 S. Hill Street, Los Angeles, set to serve as exhibit manager.

SAFETY ACHIEVEMENTS



THE NATIONAL Plant in Johnstown, Pennsylvania, of The National Radiator Company, has received a first place award in the 1953–54 safety contest sponsored by the Foundry Section of the National Safety Council. A similar award was won by the Johnstown Plastic Metals Plant of this manufacturer of a full line of heating equipment and industrial products.

• • •

A SAFETY RECORD, driving 550,000 miles without an accident won an inscribed trophy for George H. Robbins, salesman in the South Central district for the Miller Brewing Co., Milwaukee, Wis. Representing 22 years of safe driving, the award was presented "for his contribution to public safety."

• • •

EVERY YEAR since 1926 the "Iron Man," a bronze life-size statue of an Armco steelmaker, has been awarded to the safety group in the Armco Steel Corporation's plants which has the lowest number of lost-time accidents per million man hours worked. This year Middletown (Ohio) Works Safety Group 1, comprising the Middletown coke plant and blast furnace, the open hearth sections, electric melting, scrap preparation, and a number of service and staff sections, won the trophy with a record of 0.37 accidents per million man hours.

Since January, 1954, when the group had its only accident for the year, it has worked over 2,600,000 man hours without a major injury.

Winning second place in the 1954 Armco safety contest was the company's Zanesville, Ohio, Works, and in third place was the Hamilton, Ohio, plant. Twenty-two Armco groups competed for the award.

• • •

THE FIRST PLACE safety award in the large brewery classification of the United States Brewers Foundation's 1954 safety contest was won by the Miller Brewing Co., Milwaukee, Wis. With a record of 3.90 disabling injuries per million man hours worked, the company regained the title it had won during three of the four preceding years.

• • •

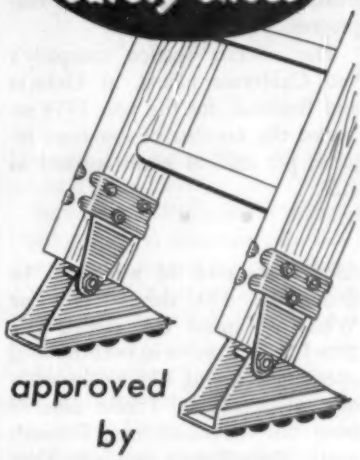
A CHARLOTTE, North Carolina professional truck driver, who has been driving commercial vehicles for more than 18 years without an accident, was presented a North Carolina "Driver of the Year" gold trophy by Governor Luther Hodges.

Elbert B. Koontz, a long-haul driver for Central Motors Lines, Inc., received the coveted annual award, after being selected by a three-man panel of judges.

• • •

AN EDUCATIONAL program, regular inspection and personal responsibility have paid off at the Ontario, California plant of Lockheed Aircraft Service, Inc., which worked 15

Dayton
safety shoes



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these shoes make your ladders safer

Your straight ladders will enjoy a firmer grip on the ground or on the floor with these popular Dayton Safety Ladder Shoes. Neoprene rubber suction treads really grip slippery floors — and — a simple turn and spike steel tips dig into the ground for real security and safety. The base is 16-gauge steel. Side plates are 13-gauge steel. Lock nuts, spring washers assure precision adjustment. Treads are renewable. All zinc-plate finish.

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months without an employee losing a day's work due to injuries incurred on the job. The safety record dates from September 1953 and is based upon nearly three million man hours worked by an average of 812 employees.

The aircraft service company's two California plants, at Ontario and Burbank, for the year 1954 reported the number of lost time injuries per million hours worked as 1.20.

• • •

As an example of what can be done, the 150 drivers of The Western Express Co. carried cargoes 1,064,752 miles in over-the-road operations, during 6⅓ weeks without an accident. Traffic officials from the Cleveland area, Pennsylvania, Massachusetts and New York congratulated the company for its pace-setting safety mark at a luncheon meeting of the firm's management and safety committee. The record was seen as a significant result of Western's unique safety program, with strict adherence to all driving rules and regulations by operators. The safety committee emphasizes driver instruction, generating and maintaining enthusiasm, judging driver performances for safety awards.

In setting the mark, Western's drivers were using heavily travelled highways, through numerous high-accident areas, from Toledo, Ohio to Boston, Mass., without mishap. Exacting schedules were maintained in all kinds of weather.

• • •

Last year marked the most successful safety record in the history of American Cyanamid Company, according to Stanley F. Spence, the firm's Director of Safety and Loss Prevention. The number of lost-time accidents per million man hours was 1.90, lowest rate ever recorded by the company and a figure considerably below the average for the chemical manufacturing industry. The company's severity rate was 0.09 in 1954 compared to 0.70 in 1953. Perfect safety records were compiled by 13 Cyanamid plants during the year.

• • •

Management of the Ansul Chemical Company of Marinette, Wis., cheerfully paid out an extra day's pay to its more than 600 employes recently, in recognition of the workers' record of no lost-time accidents during 1954. The men worked a total of 1,043,199 hours without an accident. The last lost-time accident occurred on November 24, 1953.

• • •

During a special ceremony, the Paulsboro Mfg. Co. of Fullerton, Pa., won special recognition from its compensation insurance carrier for an outstanding safety record.

The award was for accident-free operations since September 3, 1953.

• • •

Over two million man hours without a lost time accident is the record made by B. F. Goodrich Chemical Company's Louisville installation, according to J. L. Nelson, plant manager. Since the last disabling injury on September 3, 1953, some 2,200,000 man hours have been worked without a lost time accident at the large plastic and rubber making plant of BFG Chemical.

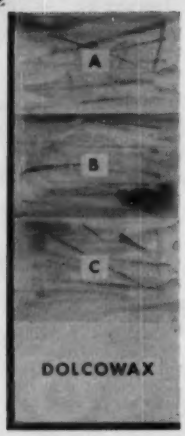
• • •

A special award from its insurance carrier for having achieved one million man hours of operation without a lost time accident has been made to Pako Corp. of Minneapolis. In establishing the one million man hour safety record, Pako employees recorded their lowest accident frequency of all time; lowest severity rate; greatest number of man-hours without a lost time accident; and greatest number of consecutive months—16—without a lost time accident.

"TRAFFIC PANEL" TEST PROVES

DOLCOWAX

BEST FOR LONG-LASTING FLOOR BEAUTY!



THE TEST—four sections of flooring, each panel prepared with a different floor wax. All panels subjected to heavy traffic. . . .

THE RESULTS—The DOLCOWAX panel retained markedly finer lustre—its beauty actually increased with wear—and it retained scuff and scratch resistance to a greater degree.

DOLCOWAX *premium quality* floor wax is most economical in the long run. Ideal for "second coating"—the second coat integrates with the first . . . no "crawling" or "puddling" to prevent an even, uniform film.

IMPORTANT: The slip-resistance feature built into DOLCOWAX permits a soft, lovely finish with safety protection! Has Underwriters Laboratories approval, of course.

When preparing floors for waxing, use CINDET, the Dolge all-purpose cleaner, for more complete stripping of old wax film.

Write for literature; consult your DOLGE Service Man on your floor finishing problems.

FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

dependable DOLGE

WESTPORT, CONNECTICUT

(For details, use Key # C-33 on card on page 75)

transportation safety

Fleet Training Courses

THE SCHEDULE of motor fleet training courses at various colleges throughout the country has been announced by the Institute of Public Safety at Pennsylvania State University. Sponsored by the National Advisory Committee for Motor Fleet Supervisor Training, the courses cover various aspects of supervision, training, safety and maintenance. The subjects and schedules for the courses are:

Supervisor Courses—selection, training and supervision of drivers; award plans; driver attitude; accident reporting; public relations; management fundamentals. Designed for fleet supervisors, managers, owners, safety directors, and insurance safety engineers. March 14–18, Univ. of Oklahoma and Univ. of Washington (Seattle); March 28–1, Univ. of Maryland; April 18–22, Univ. of Florida; 25–29; Tulane Univ. and Northeastern Univ.; May 9–12, Spring Meeting A.T.A., Minneapolis; June 20–24, Univ. of Virginia and Northwestern Univ.; Aug. 8–12, Univ. of Kentucky; Sept. 12–16, Pennsylvania State Univ.; 19–23, Purdue Univ.; Oct. 17–21, National Safety Congress, Chicago; Oct. 31–Nov. 4, Univ. of Minnesota; Nov. 14–18, Univ. of Michigan.

Trainers of Commercial Drivers—A course for driver trainers, senior drivers, foremen, supervisors, etc. Topics include effective communications, teaching methods, use of tests, accident reporting, conservation of equipment and cargo, and use of emergency equipment. April 11–15, Pennsylvania State University.

Efficient Terminal Management—For terminal managers, dispatchers, warehouse foremen and those responsible for local drivers and safety. March 23–25, Rutgers Univ.; Oct. 11–13, Pennsylvania State Univ.; Dec. 7–9, Univ. of Tennessee.

Top Management Conferences—Conference at policy-making level for owners and senior executives of motor fleets. To cover: reduction of insurance, accident and operating costs; reducing labor turnover and improving morale through awards, group insurance, pensions, etc.; developing junior managers; better public and customer relations through better driving. April 21–22, Univ. of Tennessee; Sept. 30, Pennsylvania State Univ.

Supervisor's Refresher Course—Conferences on personnel selection, training and supervising techniques. March 24–25, Oregon State College (Portland); May 5–6, Pennsylvania State Univ.

Maintenance Course—For maintenance supervisors, foremen, owners, etc. Topics include vehicle selection; basic maintenance of engine, cooling system, electrical and fuel system, clutch, transmission,

(Continued on page 67)

Testing Meter Checks Wrecker Lift Safety

A new means of quickly and accurately checking the lifting capacity of wrecking trucks and the safety factor of winches and booms has been announced by W. C. Dillon & Co., Inc.

The accompanying photograph shows how the test is accomplished. A testing meter is positioned in series between a heavy semi-trailer and the wrecker, and the load is applied through a winch. An indicated poundage somewhat below that necessary to tilt the wrecker is established as the maximum safety load and is recorded on a plate on the side of the vehicle. Use of a semi-trailer is only one means of applying the test, as any anchor point will do equally well.

A variation of this test will also serve as a means of inexpensively checking trailer and truck weights at points where no platform scales are available. All that is needed is a tripod, a hoist and the meter. Each end is weighed separately, and the two readings combined to give the total. By so doing, many thousands of dollars of highway overload penalties can be avoided, as well as expensive breakdowns due to such overloading.

The meters are available in 13 capacities, from 0–500 lbs., to 0–100,000 lbs., and are virtually unaffected by any type of weather. Because of extreme compactness, they present no storage problem, and are readily transportable if occasion demands.

For details, use Key # TS-12 on Inquiry Card on page 75.

ROAD PAINTS TAKE A NEW

When automobiles in production-line quantities pour through city streets built to horse-and-buggy dimensions, a modern phenomenon unaffectionately known as the traffic jam often results. A traffic jam can happen occasionally (and does) in any town. But in Baltimore, narrow streets and swelling car population have combined to put the squeeze on local drivers.

A couple of years ago, a group of responsible citizens in that lively port city paused to survey their traffic situation. They didn't have to look very far to see that conditions were discouragingly bad. Motoring, especially on week-day mornings and evenings, had become a mechanized nightmare of hectic gear-shifting and countless delays. Repeated snarls tied up intersections for hours, backing up for miles in a hopeless tangle of cars and trucks. Baltimore, the citizenry diagnosed, was stricken with hardening of the traffic arteries. And it was high time to do something about it.

The first pressing need was for an expert, a specialist who could put Baltimore's antiquated system of traffic control on scientific ground. Advisers pointed to Denver, where a fellow named Henry Barnes had been making news in traffic engineering. Baltimore hired Barnes away from Denver just as he was putting the finishing touches on a unique master control system for traffic lights. When he switched cities, Barnes brought along his pet antidotes for congestion—carefully timed traffic signals, judicial employment of one-way streets, and plenty of yellow and white paints.

Paint Advocate

Forceful, affable Henry Barnes has, in his 18-month reign over Baltimore roads, alternately provoked, bewildered, and amused the city with his drastic solutions to motoring gripes. It's too early to summarize his accomplishments, but this much can be said: midway in the Barnes upheaval, traffic seems to be moving faster. Few Baltimore citizens will deny that the new traffic director has already improved the driver's lot.

Although super-expressways and skyscraper parking facilities may be the ultimate answer to traffic growing pains, Barnes believes in making the most of the old-fashioned city layout in the meantime. His method is to pervade the maze of city streets with carefully marked routes designed to get motorists to their destinations in a hurry.

Chief tool for marking streets clearly and effectively is traffic paint. "There's more traffic control in a can of paint," says Barnes, "than anything else you can name. Paint will stop cars, slow them down, keep them in line and out of trouble."

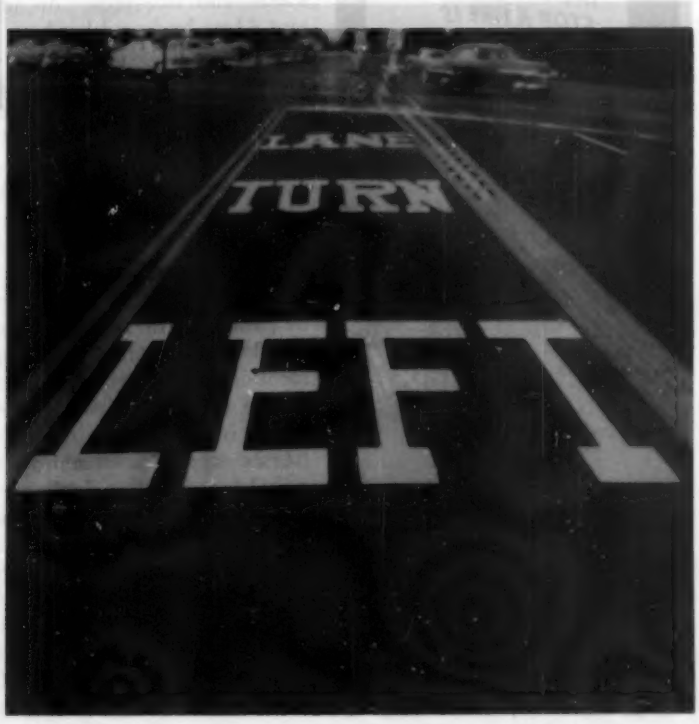
Color Recognition

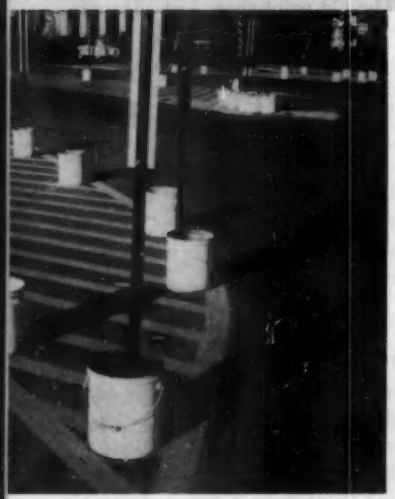
Baltimore's traffic director feels that drivers can be trained to react to other traffic symbols. For example, he uses yellow paint only where a barrier is intended. "That yellow

Parking regulation has become a major application of traffic paint since the advent of the parking meter. As important as markings showing where to park are no-parking warnings such as the yellow curb and the lined area of street shown in the picture at left, above. White paint is used for such things as crosswalks. In double or treble normal width it is a particularly striking attention-getter. Just as yellow becomes identified in the drivers' and pedestrians' minds with "danger," white becomes identified with "caution."

Cars on the 4-lane boulevard below are channeled into one lane by double-yellow line. Cars coming in opposite direction use 3 lanes, one for left turns, 2 for through traffic. Printed directions right on the pavement are read by all drivers; cut down on jams due to cars in wrong lanes. Clear paint markings get left turners into proper lane half a mile before they reach an intersection (below).

TURN!





Channelizing traffic, usually done with permanent concrete islands, can be done with paint and sand-filled, old paint buckets, as shown above.

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NO SMOKING
DANGER
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SMOKING CARRYING MATCHES OPEN LIGHTS POSITIVELY PROHIBITED
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FIRE EXTINGUISHER
GASOLINE
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STANDARD SIGNS, INC.
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(Use Key # C-35 on Inquiry Card on page 75)

line," he claims, "soon becomes identified with 'danger'—just as the octagonal sign has become synonymous with 'stop'."

Barnes thinks highway departments that shun yellow paint are missing a good bet. On concrete roadways, yellow contrasts with the surface better than white. It's quite effective on asphalt, too.

Under the Baltimore marking system, all four-lane roads are divided by double yellow lines. Where passing is permitted, a single yellow line bisects the street. (Barnes notes that absence of a yellow line helps identify one-way streets; residents are less likely to stumble into them driving the wrong way.) For all other markings—lane dividers, crosswalks, printed directions, etc.—white paint is standard. Paint is a valuable and economical marker, currently going into Baltimore streets to the tune of 11 thousand gallons each year.

Designed for Hustle

Baltimore drivers are getting used to traffic innovations, which have sprouted regularly since Barnes took over. Some streets that were once one-way north are now one-way south—and vice versa. An important 4-lane boulevard has been split unevenly with 3 lanes going east, only 1 west. Certain traffic signals include a special all-red period for pedestrian crossings (dubbed "The Barnes Dance" by a Denver newspaper). Contrary to the grumbling of critics, these variations are not adopted just to plague down-trodden drivers. Each move is dictated by a considered plan cautiously mapped by Barnes and his staff of specialists.

When the wizards of the Department of Traffic Engineering get in a huddle over a problem, the terminology is apt to get as involved as a treatise on organic chemistry. Nomenclature like "synchrolizer" and "detector pressure pad" is bandied about familiarly. These terms refer to some of the electronic paraphernalia used widely to count cars and interpret traffic data.

The information gathered by such devices coupled with first-hand observation and analysis determines what routing plan the department adopts. The routing plan, in turn, prescribes the signs, signals, and paint markings that will be required. Then the Planning Engineer draws up a detailed street map to indicate the nature and location of each traffic control device.

Upkeep Soaring

When the marking plan is definitely set by the experts, Baltimore's 25 man paint crew takes over. This same crew used to put down 4 or 5 miles of single line in a day. Now they can cover 15 or more miles, painting 4 lines simultaneously (double-yellow center line and 2 white skip lines). Barnes-promoted mechanization has sparked the increase. Equipment includes a truck-mounted machine and four hand machines for defining cross walks, stop lines, parking slots, etc.

Every new line painted creates that much more maintenance work. For lines must be renewed 2 or 3 times a year on busy streets, once in lightly traveled suburbs. As additional painting schemes are ordered, the maintenance job pyramids. The city will probably use 20 thousand gallons of traffic paint in 1955. That's a striking contrast to the 25 hundred-gallon rate a couple of years back.

The old paint shop, just adequate for the slow operations of former years, became cramped as activity and inventory snowballed. "For awhile," Barnes recalls, "we were storing paint in the police station, the fire house, and any other cubby-hole we could find." That situation was recently remedied when painters moved into new facilities with ample space for stock storage.

First Grade Only

Barnes is a stickler for keeping paint lines bright. With labor costs high, he's a quality-conscious paint buyer. One of his first actions in Baltimore was to ask for samples of traffic paint from a dozen different manufacturers. He established test lanes, watched the paints for a year, then asked for bids. "The surprising thing to us," he muses, "was that

the lowest bid offered was the best paint by our tests."

Before Barnes, Baltimore had been supplied with paint made by inmates of state penitentiaries. State officials looked askance when he broke precedent and went shopping for paint. Barnes won the argument by showing that state-made paint didn't measure up to his standards. Since the paint bill is only a small part of the cost of traffic paint application, quality comes first with Barnes and other modern traffic experts.

The dark streets of Baltimore (11 thousand gas lights still flicker) call for paint markers that have plenty of reflection at night. "Reflectorizing" with tiny glass beads steps up the dazzle of white and yellow paint spectacularly. In one year, Baltimore's paint force sprinkled over 44 tons of the beads onto lines throughout the city.

What types of traffic paint do they use in Baltimore? Barnes isn't interested in formulations; he tests and buys by brand. Avoiding specifications, he encourages friendly competition among paint manufacturers vying for Baltimore contracts.

Master Plan

The traffic complexion of Baltimore streets is by no means fully established. For example, one priority project—complete coordination of traffic lights—is still in the offing. Blueprints are drawn for a cycle-selector master that will cue signals at 350 intersections. This stop-and-go brain (representing an 800 thousand dollar investment) will bring Barnes just one step nearer his goal: maximum traffic through city streets in minimum time.

"When we get present traffic peaks rolling on downtown streets," says Barnes, "we'll be ready to cope with new problems that the planned expressway will create."

Some signs indicate that Barnes is steadily gaining ground in his dedicated tussle with Baltimore's traffic jumble. Accident fatalities, for one thing, have been running behind year-ago deaths. Test runs show that it's easier to get across town in the rush hour than it used to be. Non-local traffic on principal U. S. routes now moves through the city more rapidly.

Success has brought the bother of notoriety to the traffic director's office. As the focus of constant attention and frequent demands—from civic organizations, political officials, reporters, and the Police Department—Henry Barnes remains remarkably non-plused. Sometimes he jokes about the strain of his job.

"This office used to be a psychiatric ward," he chuckles, "and I don't think it's changed much since."

But Barnes has the important comfort of knowing that the people are rooting for him. Local citizens have really become traffic-minded; that's part of the Barnes program. Around the nation, as well, everyone concerned with the national problem of too many cars is watching Baltimore.

Asked if his methods would work in other big cities with acute traffic congestion, Henry Barnes maintains, "It's all a matter of education."

Pictures and text by courtesy of *Paint Progress*.

Fleet Training Courses

(Continued from page 63)

axle, and brakes; use of instrumentation; planned system of maintenance; selection, training and supervision of personnel. March 2–4, Univ. of California (Los Angeles); 9–11, Univ. of California (Berkeley); 21–25, Univ. of Toronto; 21–23, Univ. of Washington; 28–1, Pennsylvania State Univ.; April 11–15, Univ. of Denver; 18–22, New York Univ.; Oct. 10–14, Rutgers Univ.; 24–28, Hawaii Employers Council; Nov. 1–3, Oregon State College; 7–9, Montana Motor Transport Assoc. (Billings).

Effective Fleet Operation—Off-campus courses, on an afternoon or evening basis, for smaller fleets or small units of larger fleets. March 7, Pittsburgh, Pa.; March 8, Sharon, Pa.; March 9, Rochester, N. Y.; 10, New Brunswick, N. J.; 22, Evanston, Ill.

Complete details concerning any of the courses can be obtained by

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(Use Key # C-36 on Inquiry Card on page 75)

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(Use Key # C-37 on Inquiry Card on page 75)

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(For details, use Key # C-41 on card on page 75)

contacting: Amos E. Neyhart, Secretary, National Committee for Motor Fleet Supervisor Training, Institute for Public Safety, Pennsylvania State University, State College, Pa.

Traffic Seminars

THREE SEMINARS in traffic engineering will be offered in Evanston, Ill., by the Midwest Section of the Institute of Traffic Engineers and the Traffic Institute of Northwestern University. The seminars, lasting one week each, are designed for practicing highway and traffic engineers, with specialists in the field acting as instructors.

The first seminar, "Field Study and Survey Methods," March 7–11, is open to qualified engineers.

Following this will be unit two, "Regulation and Control Devices," March 14–18. It is open to men who have completed the first seminar or who have the necessary background in traffic engineering problems.

Subjects of this seminar will be: new developments and trends in traffic engineering, traffic signs and markings, traffic signal equipment (fixed-time and actuated), techniques of traffic signal installation and maintenance, public speaking, application of traffic signals, transit operations, control of pedestrians and turning movements, one-way streets, regulation of truck operations in a central district, curb parking regulations, and unbalanced lane methods.

The third unit is "Traffic and Transportation Planning," March 21–25. It is open to men who have completed the first two seminars or who have the necessary background in traffic engineering problems.

Subjects will include: cost of congestion and accidents, elements of city planning, elements of rural and urban highway planning and design, vehicle performance characteristics as applied to traffic design, highway capacity manual, design of parking facilities (garages and lots), street lighting, geometrics of intersections at grade, and public transit planning. More information is available from the Traffic Institute, 1704 Judson Ave., Evanston, Ill.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE & PRODUCTION

PHENOLIC HAT

(Use Key # 821 on Inquiry Card on page 75)

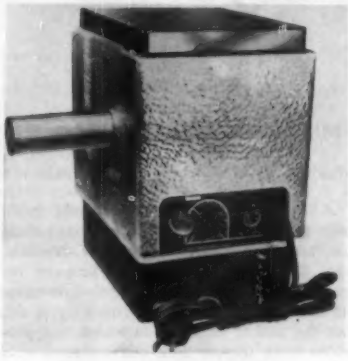
MANUFACTURED FROM 24 die-cut pattern pieces, the C-80 hard hat, made by Paramount Plastics Co., is said to withstand 80 foot pound drop-ball tests repeatedly without fracturing or breaking. The hat is designed to permit ample room between the head and the outer shell, especially at the back of the head. The suspensions cradle is laced in and is adjustable to various head sizes. In addition to impact hazards, the phenolic hat offers protection against rain, sun and flash flames. Cap brim models available as well as full brim. Accessory equipment includes chin straps, lamp brackets, winter linings and extra leather suspensions.

FOLD-AWAY STRETCHER

(Use Key # 822 on Inquiry Card on page 75)

AN UNUSUALLY versatile stretcher combines the features of litter cots with a design that permits folding to a small, compact unit for storing. It is the new model 18 "Fold-A-Way" Stretcher made by Washington Products Co. The handle grips, the straight legs and the wheeled legs all can be folded in, and the whole unit is hinged at the center so that little storage space is required. All these fold-away features permit picking up patients from ground level or with legs extended, adjustment of the patient in lying or sitting positions, carrying by two handlers, or wheeling by one person.

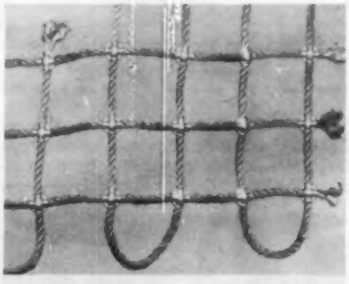
It is constructed of heavy wall aluminum with a strong rubber fabric that resists soil. The extension handles have rubber hand grips for safety. The back rest is adjustable from flat to four positions. Weighing only 23 lbs., the unit is recommended for industrial first aid rooms; hospitals; civil defense teams; fire, police and rescue squads; etc.



AIR SYSTEM SANITIZER

(Use Key # 823 on Inquiry Card on page 75)

A UNIT that is designed for installation in air conditioning and heating systems to sanitize the air by reducing air-borne bacteria and viruses is being marketed by the Iron City Chemical Co. Called the Monarch Glycolator, it has been approved by the Florida Hotel and Restaurant Commission as an agent for air sanitation. Florida is the first state that has enacted legislation that requires air sanitation along with air conditioning in public places where re-circulated air is used.



REINFORCED LIFE NETS

(Use Key # 824 on Inquiry Card on page 75)

NEWLY DESIGNED life nets with safety L & S section clamps are now manufactured by E. D. Bullard Company. Nets are constructed of ⅜-inch diameter extra superior, pure manila rope, with a breaking strength of 1,350 pounds. The rope is chemically treated to make it water-repellent and mildew-proof. Border lines on all sides are ¾-inch manila rope. Nets are available with 4, 6, 8 or 12-inch squares, and are made to individual specifications for each job.

The patented L & S intersectional metal clamp strengthens the net and makes every junction fireproof and waterproof, keeps the net from curling and knotting, and prevents the rope from wearing.

Life Nets are essential for the safety of workers on bridges, derricks, dams, buildings and similar types of construction. In addition to saving lives and catching falling equipment, they offer an important psychological benefit. Men knowing that a Safety Life Net is under them are able to do their job with more confidence and greater efficiency. Samples of the net sections are available.

EXPLOSION-PROOF FOOTSWITCH

(Use Key # 825 on Inquiry Card on page 75)

FOR USE IN those areas where industrial and scientific processes involve the presence of explosive fumes, the new Levinthal Model 3 Footswitch offers a construction comprising in its entirety Underwriters' Laboratory-approved components for Class I, Group C & D; and Class II, Group E, F, & G hazards.

Electrical ratings of the unit for alternating current include uses up to 15 amperes at 125, 250, or 460 volts. Direct-current ratings are ½ ampere at 25 volts, ¼ ampere at 250 volts. Contacts can be connected for either normally-open or normally-closed operation.

The new footswitch, made by Levinthal Electronic Products, Inc., is of grounded construction, and is supplied in standard form with a 15-foot Type S cord and a 3-prong male plug.

LOW TEMPERATURE EXTINGUISHER

(Use Key # 826 on Inquiry Card on page 75)

A FIRE EXTINGUISHER that functions effectively at temperatures of 65 degrees below zero Fahrenheit, has been developed by Ansul Chemical Co. Originally designed to meet U. S. Air Force specifications for the Arctic and other cold weather areas, the extinguishers have a special rubber hose to withstand the extreme cold without stiffening or cracking. Also, nitrogen, rather than carbon dioxide, is used to expel the extinguishing agent, which is a dry chemical.

The new units are available in 4-pound and 20-pound capacity hand portable units and 150-pound and 350-pound wheeled units. In addition to the rubber hose, they are equipped with special nozzle and puncture pin seals for proper operation in extreme cold. For temperatures below minus 40 degrees Fahrenheit, the wheeled units may be ordered with special low temperature rubber hose. All the low temperature extinguishers are painted blue to distinguish them from the regular red extinguishers used in temperate and tropical climates.

TILT SEAT STOOL

(Use Key # 827 on Inquiry Card on page 75)

TO GIVE long needed relief for "stand-up" jobs, the Ajusto Equipment Co. has designed an adjustable "Tilt Seat" stool for inspectors, polishers, pressmen, bank tellers and jobs requiring standing for long periods of time. No tools are required to make any of the adjustments and the seat can be used in a horizontal instead of tilted position for bench work. The height of the stool can be adjusted to personal requirements, and the unit has two kinds of foot rests: one mounted on the central column, primarily for a change of leg position in ordinary sitting; and the other in the form of a foot plate for use when the seat is in the tilt position. Both foot rests can be adjusted as required. The versatile stool should help reduce foot and leg ailments as well as general fatigue.

MECHANICAL RAM HAMMER

(Use Key # 828 on Inquiry Card on page 75)

A SELF-CONTAINED, completely portable hammer, operating on the ram principle, has been introduced by E. V. Nielsen, Inc. Called the Ram-Ex, this hammer requires no air lines or electrical connections. It is completely operated by hand, but the maker claims it is faster and provides more impact than conventional tools of the same weight.

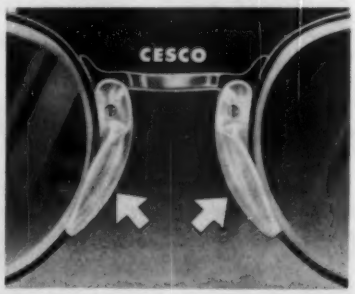
The chuck has a quick change action for using over 40 tools for chipping, gouging, drilling, rivet busting, cutting, sealing, scaling, caulking, roughing, and other operations normally performed by pneumatic or electric hammers.

Any of three size weights may be mounted on the guide rod at the rear of the chuck holder. The guided blow, plus bosses around the ends of the weights and the chuck holder, make it almost impossible for an operator to injure his hands. An adjustable, sliding collet on the guide rod, as well as interchange of different size weights, are used to control the impact of the stroke from a light tap to a smashing blow.

FLEXIBLE SPECTACLE-PADS

(Use Key # 829 on Inquiry Card on page 75)

A NEW BRIDGE-PAD for its line of CESCO Comfort-Bridge Spectacle-Type Goggles has been announced by the Chicago Eye Shield Co. Made of polyethylene, in right and left, these moulded pads are said to be flexible enough to adapt themselves to the contour of the individual wearer's nose structure for perfect, full-contact fit. They spread the weight evenly and lightly. Known as part No. F9P, they are available on new Comfort-Bridge Spectacle-Type Goggles or separately as replacements for non-flexible plastic pads furnished originally.

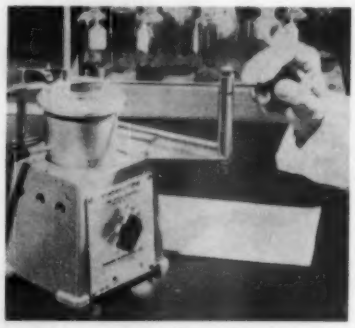


FUNCTIONALLY DESIGNED FIRST AID UNITS

(Use Key # 830 on Inquiry Card on page 75)

THE DAVIS Emergency Equipment Co. Inc. have redesigned their first aid D-Cartons to provide for a more convenient inventory system as well as greater sanitary protection for the contents of the cartons. The new sanitary wrap is sealed with an easy-to-open red tab. When the cartons are placed in their case, a continuous red line shows that none has been opened. But a break in the red line indicates that a box has been broken and that it should be checked for replacement before the contents are exhausted.

The color of the Davis D-Cartons has been changed to the same shade of gray as their cases and the lettering made more legible for quicker identification.



NEW FLASH-POINT TESTER

(Use Key # 831 on Inquiry Card on page 75)

THE TAG Open-Cup Flash-Point Tester, meant originally for petroleum chemists, has since been adopted as standard in the testing labs of the railroad, trucking, paint, solvent, varnish, and vegetable-oil industries for open-cup flash-point determinations of mobile volatile liquids flammable below 175°F. The Fisher Scientific Co. has now brought out a new model with built-in, easy-to-control electrical heating.

A solidly-mounted 150-watt unit in the base gives evenly distributed heat, unaffected by drafts, with a heating rate that conforms to the 2°F-per-minute specified by the American Society for Testing Materials. The new "percent-wattage" method of indicating the power input is especially utilitarian since temperature increase in the sample varies almost linearly with percent wattage.

The new Tester is also available with gas and with alcohol-lamp heaters. Each of the models has a water bath to hold the sample cup, a support for bath and ther-

mometer, and a permanently-mounted, flame-tipped wand with which to ignite the vapors from the sample.

The water bath has been redesigned with both outlet and inlet so that water can be circulated between determinations to cool the sample cup and increase the speed of sampling. To keep the test flame the specified size, a bead of exactly the right diameter is mounted on the edge of the bath for easy comparison.

A self-positioning support swivels the thermometer out of the way while samples are changed and returns it to the required position for the new sample.

The new Tester meets the specifications of Committee D-1 for ASTM Tentative Designation D-1310 and satisfies all of the requirements of the Bureau of Explosives.

WELDER'S SOAPSTONE HOLDER

(Use Key # 832 on Inquiry Card on page 75)

A SOAPSTONE holder that protects the marking material from breaking and from becoming mislaid is available from Atlas Welding Accessories Co. This holder is rigid metal and has a spring clip for carrying it in the pocket where it is always handy. It has a button slide in the back so the soapstone can be readily expelled as it wears down, permitting the welder to use short ends.

COLD IMMERSION CLEANER

(Use Key # 833 on Inquiry Card on page 75)

ACCORDING TO The Curran Corp., a new development in Self-Emulsifying Diphase Solvents for decarbonizing and paint stripping promises tangible and substantial labor saving in engine repair and overhaul. Formulated for diesel as well as aero internal-combustion engine use, the new solvent is of the cold immersion type. Its self-scouring action cleans carbonaceous tars, coke and carbon varnish, strips paint and primers.

Properly supervised, a service life of three years is estimated as no loss occurs except through dragout. Replenishment automatically restores tank level and top performance. Evaporation is controlled by a floating glycerine-like "Hydro-Seal" to which distilled water may be added up to 50% volume in a deep tank, thus allowing agitation or recirculation of the solvent beneath the Hydro-Seal which remains undisturbed.

STACKABLE CARBOY

(Use Key # 834 on Inquiry Card on page 75)

INCREASED SAFETY and ease of handling are major features of a new stackable carboy produced by the Industrial Safety Supply Co., Inc. The light-weight solid wood jacket and polyethylene bottle have been approved by the ICC.

The "Poly-Box Carboy," designed to fit ordinary acid-handling equipment, is available with Plaxpak carboy bottles of 6½ and 13 gallon capacities. Produced for maximum safety, the carboy jacket features a safety filling liquid level slot. Triangular corner posts guard against damage from rugged use. The rectangular jacket has an opening in its base for easy and safe stacking. A skidded bottom allows handling by lift trucks. Special woods and metal fasteners are available.

STORED PRESSURE EXTINGUISHER

(Use Key # 835 on Inquiry Card on page 75)

NO INVERTING or bumping is necessary for operation of the "Redi-Jet," a new type 2½ gal. water or anti-freeze fire extinguisher made by Stop-Fire, Inc. It is a one-hand operated stored pressure unit (not cartridge-operated): all the action is at the top. It is pressurized with air or nitrogen to 100 psi. Discharge is accomplished with a one-hand squeeze-grip operating lever which also serves as a carrying handle at the top of the extinguisher. The powerful stream carries 35 ft. or more. With anti-freeze solution, the "Redi-Jet" is effective from —40 F to plus 120 F.

The unit has been fully approved by Underwriters' Laboratories, Inc., for use against wood, paper, rubbish, and all other Class A fires. Additional features include: controlled flow with spring loaded valve; no need for annual recharge, gauge provides a constant visual check; simple, inexpensive servicing with a standard air compressor at any garage; convenient installation on standard bracket.

The "Redi-Jet" is built to withstand corrosive elements and rough usage. It features a one-piece seamless drawn 85–15 brass shell with corrosion-proofed interior, and solid brass fittings. The shell is leakproof: 450 psi hydrostatic test.

AIR-FLOW AND LIQUID-LEVEL DETECTOR

(Use Key # 836 on Inquiry Card on page 75)

A NEW PRECISION flow-detecting instrument, called the "Detect-A-Flo," designed to sense and respond to changes or stoppages in the flow of air has been developed by Fenwal Inc. It can be used as a warning device in air-cooled equipment, a ventilation control, and for similar applications where a particular flow rate must be maintained. It may also be used as a liquid-level detector or controller in storage and supply tanks, responding to a change of less than 0.1 inch in liquid level. Viscous fluids have little or no effect on its operation.

The instrument can be set to respond to any mass rate of flow of air in the approximate range of 1000 to 50,000 lb. per hr. sq. ft. It is easy to install directly in the duct line or tank being monitored, thus eliminating lead lines, auxiliary fittings, and related condensate or clogging problems. The unit has no moving parts, preserves the smooth flow of the monitored stream, is unaffected by vibration, is repeatable, and is hermetically sealed.

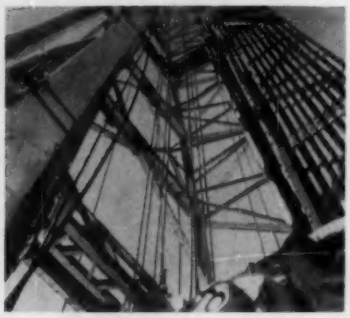
One leg of the unit is heated by a small internal heater. As the flow rate drops, the heated leg expands because less heat is conducted away, and this expansion is transmitted through lever action to a strut-and-electrical-contact assembly in the other leg. This motion causes the contacts to move apart, thus breaking the circuit. The instrument retains its accuracy in either a constant or changing ambient temperature.

STABILIZED SAFETY SOLVENT

(Use Key # 837 on Inquiry Card on page 75)

A NEW, highly stabilized "Vythene" Safety Solvent has been announced by Tect, Inc. It is non-flammable, fast evaporating and suitable for a great variety of industrial and household purposes. It may be used for such diverse operations as the cleaning of electric motors and electrical equipment, plant maintenance, wax dispersion or removal, cleaning of machinery, typewriters, metals, motion picture film, and grease spot removal on garments.

It is a stabilized 1, 1, 1-Trichloroethane for which there is a U. S. patent pending. It can be refluxed indefinitely in the presence of such reactive metals as aluminum, brass and copper without chemical breakdown. It is non-corrosive to all metals and practically inert to ordinary electrical insulating varnishes and materials. 1, 1, 1-Trichloroethane was rated in 1953 by the American Conference of Governmental Industrial Hygienists as 1/20th as toxic as carbon tetrachloride.



IMPROVED WIRE ROPE

(Use Key # 838 on Inquiry Card on page 75)

A NEW HIGH strength wire rope, claimed by the manufacturer to be at least 15 percent stronger than the best grade rope now made, has been announced by the wire rope divisions of American Chain & Cable Company. Initial production will go to the construction, petroleum, mining, and logging fields. An average tensile strength of 300,000 psi has been achieved by the use of special precise analysis high carbon steel wire and improved processing.

The preformed rope, to be known as VHS—designating very high strength—will be marketed by both the Hazard Wire Rope and American Cable Divisions. It is already being used by the Navy for steam jet catapult launching assemblies, and for arresting gears and barriers. It has been widely tested in heavy-duty construction, mining, petroleum (pictured here) and logging installations where its service life more than doubled that of existing cables. Present diameters of the new product range from ½ inch to 2 inches.

In addition to 15 percent greater tensile strength than improved plow steel, VHS cable is more wear-resistant, keeps its shape under pressure, resists fatigue, is tougher, and resists plastic deformation or the tendency to become "hide bound." A special new lubricant is used which is designed to last for the life of the rope.

PLASTIC HEADSHIELDS

(Use Key # 839 on Inquiry Card on page 75)

TWO NEW molded fiber-glass plastic headshields for the head protection of welding operators are announced by Hobart Brothers Co. The manufacturer claims that this construction offers the strongest protective material per ounce of weight, and that the shields provide the user lighter weight comfort with complete head protection from the welding arc and spatter. Fiber-glass reinforced plastic is durable, heat and moisture resistant, and its smooth, attractive surface is easy to clean.

Type 971 has the lens holder molded right into the shield to eliminate light leaks and to further reduce the weight. Type 973 has a lift front lens holder to permit the operator to view, chip and clean the weld without raising the hood. Both shields are equipped with Federal Specification lens.

MAGNETIC FLOOR SWEEPER

(Use Key # 840 on Inquiry Card on page 75)

HOMER Magnetic Floor Sweepers remove nails, wire and other magnetic material from roads, streets, airports, construction jobs, machine shop and factory aisles, loading areas, etc. Made by the Homer Mfg. Co., Inc., the sweepers save tires, tire repairs, down-time and promote personnel safety, and recovery of valuable scrap material.

They consist of a permanently energized Alnico V magnet assembly, mounted on semi-pneumatic tires, with ball bearing wheels. Handles, of tubular steel with plastic handle grips, are adjustable to two positions: for manual use, or for towing with truck or other vehicle. They roll freely and are easily maneuvered in any plant or factory location. Handle and wheels are quickly removed and the magnetic assembly can be used for suspended sweeping with fork or industrial lift truck. They can be used in wet or dry locations. An automatic stripping device makes it easy to unload recovered tramp iron from the sweeper. Three models are available for light, heavy, extra heavy duty. Several width sizes for each model.

DEGREASER CLEANOUT INDICATOR

(Use Key # 841 on Inquiry Card on page 75)

A BOON to users of vapor degreasers is the new "Cleanout Indicator" made by Ramco Equipment Co. Developed to save cleanout costs, this specially designed instrument tells the exact condition of the solvent in the degreaser. It eliminates guesswork and makes it easy to keep an accurate check at all times. Calibrated for both trichlorethylene and perchlorethylene solvents, the indicator is easy to read, and may be carried in the breast pocket. It comes complete with a performance and control chart and instructions.

CALKED STEEL SOLE

(Use Key # 842 on Inquiry Card on page 75)

A FLEXIBLE steel strap-on sole, made by O. A. Norlund Co., Inc., provides sure footing on wood, stone or ice. There are 26 case-hardened steel calks riveted to the steel sole, which bends easily with the natural flexing of the foot. The sole can be worn on either boots or shoes and is held in place by web straps. Metal strips at the edge of the shoe protect the webs from abrasion and can be bent with pliers to conform to the shape of the shoe and prevent the sole from sliding beneath the shoe. The calked soles are being used by ice house workers, lumbermen and other outdoor workers.

SCAFFOLD SAFETY HOOK

(Use Key # 843 on Inquiry Card on page 75)

PAINTERS, maintenance departments, contractors, builders and other users of hanging scaffolds should be interested in a new cleat-hook to replace clumsy, unsafe knots for rope scaffolds and bos'n chairs. Originally developed for the marine field, the "Safeway Sailor's Hook" is being marketed by Stuart D. Brown.

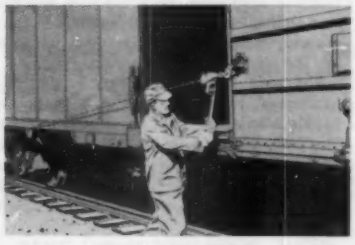
Made of aluminum alloy, the hook is said to have a tested safety capacity of 2,000 lbs. In addition to its safety features, the device eliminates the need for fastening and unfastening knots each time the position of the scaffold or chair is changed. The knot on the hook is made once for the duration of the job. The unit is available alone or with a complete bos'n chair with brackets for a safety belt.

BOX CAR DOOR OPENER

(Use Key # 844 on Inquiry Card on page 75)

THE LUG-ALL Company has introduced its newest tool, the Lug-All Car Door Puller, Model HDR-27. It weighs only 12½ pounds, and has a reach of 27 feet and a total pulling capacity of 3,000 lbs. It will open box car doors easily—single doors, double doors, even doors on 50 ft. box cars. It eliminates use of heavy tools and crow bars, and opens box car doors safely, quickly and economically.

The device can be rigged by single cable for extra long reach or double cable to provide extra power on really "tough" box car doors. An eye bolt and clevis hook combination at the end of the frame permits right angle anchorage on projecting parts of the box car. A safety feature is that the handle will bend before the Car Door Puller can be dangerously overloaded, thus preventing possible injury to employees.



LPG POWERED TRUCKS

(Use Key # 845 on Inquiry Card on page 75)

UNDERWRITERS' Laboratories approval on Yale LP Gas or propane powered industrial lift trucks from 3,000 to 10,000 pound capacity has been announced by The Yale & Towne Mfg. Co. Covered in the approval is the installation of either A.S.M.E. or I.C.C. containers. Fuel for truck operation is provided in one of two ways: a bottle arrangement which makes possible quick and easy refueling by substituting another bottle; a tank which is a permanent part of the truck and is refilled from a storage source.

For trucks to use LP-Gas or Propane, it is necessary to convert the gasoline engine to this fuel by the substitution of accessory equipment along with an externally mounted bottle or tank. LP-Gas or Propane is suitable for industrial truck operation under the following conditions: 1. A cycle of operation which includes many idling and slow speed periods. (Propane does not have as great a tendency to form carbon deposits and sludge under these conditions.) 2. Faster cold weather starting followed by a smooth running engine. (Propane is fed to the carburetor as a gas and no vaporization is necessary.)

FOOT BATH TRAY

(Use Key # 846 on Inquiry Card on page 75)

THIS FOOT bath tray offers several safety and maintenance features in its use to prevent athlete's foot. It has a non-skid waffle tread to prevent slipping. Its round shape keeps dirt and sediment from lodging in corners, making it easier to clean.

This modern foot bath is molded of tough, long-life rubber that is not affected by antiseptic solutions. It measures 19 inches in diameter by 3½ inches high, a convenient size for shower rooms of any size in plants, factories, schools, institutions, swimming pools, homes, etc. Available from General Scientific Equipment Co.

DEVICE ATTACHES WELDING HELMET TO HARD CAP

(Use Key # 847 on Inquiry Card on page 75)

A SIMPLE method for economically attaching a welding helmet to a safety cap is embodied in the "Two clips and Neoprene strap" device designed and manufactured by The Fibre-Metal Products Co. The resultant combination provides the double protection of the usual welding helmet plus head protection for situations where there is a chance of falling or flying objects that might cause head injuries.

Quick installation of the "Speedy Attachment" to helmets in the field can be made with a screwdriver or a coin. The welder then can attach or detach the safety cap which is "clipped" into the helmet under the tension of the Neoprene strap. No basic alteration of either the helmet or safety cap is necessary. It fits all popular peak-type safety caps for complete head protection.

PORTABLE AIR COMPRESSORS FOR BREATHING EQUIPMENT

(Use Key # 848 on Inquiry Card on page 75)

FOR OWNERS OF demand-type breathing apparatus, there are new, lightweight, portable high pressure air compressors introduced by The Cornelius Co. There are four models to supply pure, clean air to users of Scott Air-Pak and MSA Respiratory Equipment. The new units are available with electric motor or gasoline engine power source. They are said to be the first truly portable high pressure compressors for civilian and commercial use. Miniature in size, their portability and ruggedness provide the versatility necessary for "on-the-spot" charging of portable cylinders as well as air storage tanks.

The 32 series includes 2 models which provide 0.6 cfm of free air and have a rated discharge pressure of 2500 PSI. Each assembly weighs less than 50 pounds complete with power source. The 130 series also includes 2 models which will deliver 2cfm of free air and discharge pressures of 3000 PSI. The 130 series is recommended for users of larger air volumes or where it is necessary to maintain pressure in a cascade storage system.

MOTORIZED WHEELBARROW

(Use Key # 849 on Inquiry Card on page 75)

A MOTORIZED wheelbarrow, the "Workhorse," is equipped with two-drive wheels in front and a guiding caster-wheel in the rear, over which is mounted a 4-cycle, 2½ hp., gasoline motor. The new unit, made by Worthington Mower Co., can handle full 400-lb. loads. Throttle and clutch controls are on the handles, for easy starting and speed control. Speed can be maintained at an easy walking pace. Thick tractor treads on the drive wheels enable the wheelbarrow to be used over rough, irregular ground.

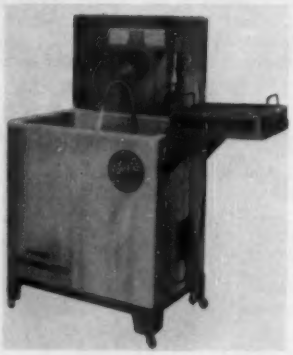
The rear caster wheel permits the unit to be steered easily and spotted in position accurately. The tray is so balanced that dumping is a simple, rather than a backbreaking job. By pulling a catch and lifting lightly on a handle at the rear of the tray, the load is dumped without effort.

AUTOMATIC DEGREASER

(Use Key # 850 on Inquiry Card on page 75)

A NEW, automatic cold-washing degreaser, designated as the "Super Cleanmaster" Model 50, is announced by the Kleer-Flo Co. The machine employs a powerful turbulent action created by compressed air which combines with the penetrating chemical properties of the cleaning compound, enabling it to remove heavy deposits of oil, dirt, grease and chips from all types of metal parts.

A patented electric pump prolongs the life of the cleaning compound by continuously filtering out dirt, chips, and abrasives. The machine is equipped with a full length air-agitated soaking tank, hinged work shelves, parts basket, drying shelf, and a compressed air gun for faster parts drying. Mounted on casters, the unit can be easily moved to any part of the shop for "on the spot" production or maintenance cleaning operations.



HEAT HOOD

(Use Key # 851 on Inquiry Card on page 75)

PERSONNEL OF Safety First Supply Co. have developed a new mask (SF524AT) for second helpers and similar workers subjected to heat, spark and flame hazards. The mask, which has undergone severe on-the-job testing, incorporates many advanced features that increase safety and comfort for the wearer. It is made of tropic weight asbestos cloth, aluminized for greater heat deflection. The plastic vision area has been made oversize for greater visibility, and the ventilating screen in the rear, also oversize, is made of stainless steel wire, which prolongs its life because of its resistance to corrosion. The mounting is a sturdy fiber frame with adjustable headgear.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the opposite page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti Fogging Equipment
104	Sweatbands
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Safety Toe Shoes
112	Safety Boots
113	Wooden Sole Shoes
114	Anti-Slip Soles
115	Oil-Proof Soles
116	Welding Helmets
117	Welding Curtains
118	Protective Skin Creams
119	Skin Cleansers & Soaps
121	Sanitary Drinking Cups
122	Athlete's Foot Control
123	Salt Tablets
124	Noise Control
125	Antiseptic Medication
126	Burn Medication
127	First Aid Kits & Supplies
128	Stretchers & Litters
129	Resuscitators

Key Number	Subject
130	Portable Ventilators
131	Dust & Fume Collectors
132	Carbon Monoxide Control
133	Fire Extinguishers
134	Safety Cans
134A	Extinguishing Ash Trays
136	Alarms & Warning Lights
137	Safer Solvents
138	Flammable Liquid Pumps
139	Explosion-Proof Lights
140	Electrical Insulation Testers
141	Anti-Slip Flooring & Steps
142	Anti-Slip Waxes & Finishes
143	Floor Cleaning Products
144	Floor Machine Equipment
145	Oil & Grease Absorbents
146	Paints
147	Ladders & Safety Devices
148	Scaffolds
149	Work Platforms
150	Fluorescent Lamp Guards
151	Machine Guards
152	Power Press Feeders
153	Safety Signs
154	Aisle Marking Equipment
155	Safety Awards & Emblems
156	Employee Safety Guide
157	Hand Tools

AUTO SAFETY BELT

(Use Key # 852 on Inquiry Card on page 75)

AN AUTOMOBILE seat belt, made in accordance with the specifications of the Cornell Aeronautical Laboratory after their research into vehicle crashes and testing of belt designs, is being marketed by the Hickok Mfg. Co. The Cornell tests indicated that car occupants, restrained by suitable seat belts, would be safeguarded from severely damaging impacts such as striking the head against the windshield.

The seat belt kit includes a specially fabricated lap-strap belt with a safety buckle similar to that used in airplanes. The belt, along with the seat, is held in place by a supporting bar anchored through the floor to the frame by steel cables. The belts are available in a range of colors.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

PERSONAL PROTECTION

Safety Spectacles 222
U. S. Safety Service Co. Well-illustrated 4-page folder on modernly styled safety spectacles incorporating a new safety lens material. The full-color bulletin illustrates the attractively colored spectacles in styles suitable for both men and women, with corrective and protective lenses.

Self-Contained Breathing Equipment 223
Scott Aviation Corp. A large, well-illustrated folder gives detailed information on the self-contained Air-Pak for fire fighting and industrial respiratory safety. Featured is a large detail drawing of the equipment with data on the various parts.

Aluminized Clothing 224
Far-Ex Corp. Catalog contains detailed descriptions and technical data on several types of Fyre-Armor garments for employees subjected to high heat radiation and for industrial and municipal fire departments and rescue squads.

Decontamination Suits 225
Mine Safety Appliances Co. A two-page bulletin describes and illustrates a chemical type decontamination suit for protection against extreme chemical toxicity hazards such as nitrobenzene, nitrotoluene and aniline. The suit is a complete unit from neck to toes and includes a special air-supplied hood. Also shown is an acid suit suitable for light concentrations.

Electrical Workers' Gloves 226
Wicx-Merit Glove Co. Several types of cover gloves for linemen and electrical workers are shown in a 1-page bulletin. These are leather gloves and the bulletin indicates the types of electrical or utility construction jobs for which the various styles are suitable.

Eye Protective Equipment 227
Watchemoket Optical Co. Many new developments are included in the newly revised 12-page catalog of plastic eye-protective products. Featured are new types of ventilated goggles, visored goggles and other models developed previously.

FIRE PROTECTION

Oil and Gasoline Containers 228
Eagle Mfg. Co. This catalog, fully illustrated, offers the company's complete line of oilers and oil and gasoline containers. Many of the safety cans are UL and FM approved. The catalog is notable for the wide variety of cans and oilers shown.

Fire Resistant Walls 229
Vermiculite Institute. This folder contains several informative data sheets on Vermiculite concrete panel or spandrel walls which combine a high degree of fire resistance with light weight. Included are reports on the design of cast-in-place walls, and three reports on fire tests, including one by UL.

MAIL POSTAGE PAID CARD FOR MORE DATA

Fire Detector Unit 230
The FireStat Co. This bulletin gives basic data on an automatic fire detector unit which can be used with an alarm system to provide automatic warning of fire. It can be used in factories, garages, schools, hotels, homes etc.

LIGHTING EQUIPMENT

Emergency and Inspection Lights . 231
Stewart R. Browne Mfg. Co., Inc., An unusually valuable 42-page catalog of somewhat specialized lighting equipment that is widely needed to prevent accidents. The lights, many UL approved, are explosion proof or vapor proof or have special safety features. Included are flashlights, extension lights, both general and special inspection lamps, floor and flood lights, grounding clamps, flashers, etc.

Vapor Tight Lights 232
Day-Ray Products Inc. Vapor and moisture tight inspection lights that utilize a fluorescent lamp are described in this two-page bulletin. Full specifications are given and suggested uses for maintenance work in automotive, chemical, paint and other industries are indicated. Servicing instructions are also included.

FLOOR MAINTENANCE

Eliminating Slippery Floors 233
Walter G. Legge Co. Inc. An entertaining but informative 16-page booklet, "Mr. Higby & The Gremlin," gives the inside story on floor accidents, and shows how to improve floor safety while eliminating wasteful maintenance practices.

Oil Absorbing Compound 234
The Flor-Dry Co. Appropriately titled "A Carpet of Safety," this small folder outlines how this UL-approved oil and grease absorbent prevents accidents, fires and simplifies maintenance. It also lists typical industries where the absorbent is particularly useful.

Safety Gratings 235
Bustin Firm-Grip Grating Corp. A new 12-page illustrated catalog shows this company's many types of grating, platforms, ramps, ladders, flooring, catwalks, dockboards, etc., and also truck safety equipment such as grille guards, gates, brackets, and safety steps.

Steel Grid Flooring 236
Irving Subway Grating Co. Inc. A small folder gives concise information on heavy duty industrial floors that utilize a steel grid whose open spaces are filled with concrete, asphalt, etc., or can be installed on top of existing floors. The folder outlines uses for the grating and its long-wearing features.

BUILDING MAINTENANCE

Locker Room Design 237
The Moore Co. This design file outlines standards to be maintained in toilet, shower

(Continued on next page)

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE.

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March, 1955

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Free Bulletins (Cont'd)

and locker rooms for maximum sanitation and efficiency. One section gives complete details for laying out locker rooms with lockerbaskets that can be raised to the ceiling.

Industrial Vacuum Equipment ... 238
The Spencer Turbine Co. An unusually well illustrated 12-page bulletin containing complete description of stationary and portable vacuum equipment. Featured is a table for estimating the horsepower required for any specific job, an outline of the latest method of refuse handling, and the application of vacuum to machine design.

Plastic Windows 239
Alsynite Co. of America. An illustrated bulletin describes shatterproof window panes made of lightly colored, flat fiber-glass. The bulletin outlines the material's ease of installation, light diffusion and shatter resistance, and suggests suitable locations for using the various colors.

Electric Panelboards 240
General Electric Co. Complete specifications and selection data on electrical distribution panelboards suitable for the control and protection of branch circuits, and as feeders to lighting panelboards, motors, and miscellaneous power loads are given in this illustrated 4-page bulletin. Units are for 250-volt AC or 125–250-volt DC service.

Piping Vibration Eliminators 241
American Brass Co. Vibration eliminators that are designed for air conditioning or refrigeration units or any general piping or tubing where vibration is encountered are described in a 4-page bulletin which includes construction details and size specifications. The equipment absorbs vibration, deadens noise, and reduces maintenance.

Coolant Filtration System 242
Industrial Filtration Co. This 4-page bulletin describes the installation of a central coolant filtration system. It outlines the maintenance and hygienic advantages as well as production efficiencies and economies.

MISCELLANEOUS

Safety Awards 243
Williams Jewelry & Mfg. Co. The new catalog of "Industrial Emblems & Awards" illustrates and describes an extensive line of plaques, trophies, badges, emblems, and a wide variety of award-gift items.

Safety Signs 244
A. C. Davenport Son Inc. This convenient 2-page bulletin lists standard wordings for several types of enamel-painted metal signs. Types of headings include: Danger, Caution, Safety First, Notice, Directional, Traffic and also special worded.

Hose Check List 245
Thermoid Co. Maintenance engineers and other users of industrial rubber hose will find this check list of use in obtaining longer hose life. It is printed on stiff cardboard for wall mounting and lists 11 important points and shows four common abuses.

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(For details, use Key # C-39 on card on page 75)

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first aid for throat irritations

SORE THROATS due to coughs and colds, if neglected, may result in lost man hours of work.

THANTIS® Lozenges contain no antibiotic; they produce no unpleasant by-reactions in the mouth.

THANTIS Lozenges relieve pain promptly—reduce infection—act prophylactically.

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HYNSON, WESTCOTT & DUNNING, INC., BALTIMORE 1, MARYLAND

(For details, use Key # C-40 on card on page 75)